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ABSTRACT

A study evaluated implementation of the California school-to-career initiative (STC) and its influence on student outcomes. It attempted to collect data from all local partnerships (LPs) receiving federal funding under the School-to-Work Opportunities Act. Findings with respect to implementation indicated many schools offered career development activities; coordination across K-12 was not found; teachers and administrators generally held positive views about STC, but felt STC-related professional development opportunities should be more frequent and extensive; curriculum integration of academic and career-related learning occurred in a substantial number of high schools, but was not widespread in elementary and junior high/middle schools; and STC drove changes in curriculum and graduation requirements. With regard to connections with key partners, LPs reported employer involvement in STC as fairly common, very limited involvement by labor organizations, some involvement with community-based organizations, and significant connections with postsecondary institutions. STC students displayed more positive attitudes about school experiences and the future, better academic performance, and higher postsecondary enrollment rates. STC's most significant contribution to systemic change was a clear shift toward greater focus on career awareness as a key element of the education experience. Findings did not support sustainability of a comprehensive STC system in California, but some elements are likely to continue. (YLB)

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California School-to-Career:

Helping Students Make Better Choices For Their Future

Final Evaluation Report

Submitted by:

WestEd
730 Harrison Street
San Francisco, California 94107

and

MPR Associates, Inc.
2150 Shattuck Ave., Suite 800
Berkeley, California 94704

September 9, 2002

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TABLE OF CONTENTS

EXECUTIVE SUMMARY .... **i**

CHAPTER I
INTRODUCTION **1**
Background 1
How the Report is Organized 3

CHAPTER II
METHODOLOGY **5**
Overview 5
The Employer/Labor Organization Survey 6
Interviews with Non-Case Study LP Directors 7
Synthesis of Data from Extant Sources 7
CORE Case Studies 7
PLUS Case Studies 9
Can the CORE or PLUS Results Be Combined to Reflect STC Throughout California? 10

CHAPTER III
LP COMPOSITION, ORGANIZATIONAL STRUCTURE, AND OVERALL ROLES AND RESPONSIBILITIES IN STC IMPLEMENTATION **11**
Introduction to Case Study LPs 11
LP Origin 13
LP Composition and Organizational Structure 14
Changes in LP Composition and Organizational Structure 17
LP Roles and Responsibilities 18
Support Received from State Agencies 21

CHAPTER IV
CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS **22**
Career Awareness Activities 23
Work-Based Learning 26
Career-Focused Curricula 29
The Number of Students Participating in Career Development Activities and Programs 32
The Relationship Between Student and School Characteristics and Level of Participation in Career Development Activities and Programs 33
The Progression of Career Development Activities and Programs Across Grade Levels 37
Challenges Associated with Implementing Career Development Activities and Programs 38

CHAPTER V
STRUCTURAL AND PROGRAMMATIC ASPECTS OF STC IMPLEMENTATION **39**
Attitudes and Professional Development of Teachers and Principals 39
Curriculum Integration Strategies 48
New Graduation Requirements, Standards, and Opportunities for Certification 55
Connections with Business, Labor Organizations, CBOs, and Postsecondary Institutions 57

CHAPTER VI

STUDENT OUTCOMES 70
Background and Analytical Perspective 70
Relationship Between Students' Participation in STC Activities and Their Attitudes About Their Educational Preparation for the Future 72
Relationships Between STC Participation and Behavioral Outcomes 78

CHAPTER VII

SUSTAINABILITY OF SCHOOL-TO-CAREER EFFORTS 84
What Are LPs Doing To Sustain STC? 84
How Extensive Are Sustainability Efforts? 91
What Does LP Data Suggest About Progress Towards Systemic Change and the Future Sustainability of STC? 94

CHAPTER VIII

CONCLUDING REMARKS AND RECOMMENDATIONS 99
Conclusions 99
Recommendations 102

REFERENCES....................106

Tables

Table 1: Major elements of the California School-to-Career Evaluation: research methods and organizational responsibilities, by study component

Table 2: Background information on 13 case study LPs

Table 3: Percent of elementary schools in case study LPs that offered various career awareness activities in 2000-2001

Table 4: Percent of junior high/middle schools in case study LPs that offered various career awareness activities in 2000-2001

Table 5: Percent of high schools in case study LPs that offered various career awareness activities in 2000-2001

Table 6: Percent of high schools in case study LPs that offered various work-based learning (WBL) activities in 2000-2001

Table 7: Numbers of career academies and career majors/pathways in case study LPs

Table 8: Percent of 2000-2001 California high school seniors in case study LPs who participated in career development activities

Table 9: Percent of high schools in case study LPs that communicated with junior high/middle schools and postsecondary institutions to coordinate/connect career development activities in 2000-2001

Table 10: Percent of elementary schools in case study LPs that offered STC-related professional development in 2000-2001

Table 11: Percent of junior high/middle schools in case study LPs that offered STC-related professional development in 2000-2001

Table 12: Percent of high schools in case study LPs that offered STC-related professional development in 2000-2001

Table 13: Percent of elementary and junior high/middle schools that provided curriculum units about one or more industries/occupations in 2000-2001

Table 14: Percent of high schools that are integrating academic and work/career related curricula

Table 15: Percent of high schools in case study LPs that used various strategies in 2000-2001 to promote contextual learning, integrate academic and career-technical education, link secondary and postsecondary education, and integrate school- and work-based learning

Table 16: Percent of high schools in case study LPs reporting various connections to postsecondary education or training institutions in 2000-2001

Table 17: Summary of statistically significant relationships between selected measures of participation in STC activities and 2000-2001 California high school senior attitudes about high school, by type of STC participation measure and LP

Table 18: Summary of statistically significant relationships between selected measures of preparation in STC activities and 2000-2001 California high school senior attitudes about postsecondary and career preparation, by type of STC participation measure and LP

Table 19: Summary of statistically significant relationships between selected measures of participation in STC activities and 2000-2001 California high school senior attitudes related to engagement in school, by type of STC participation measure and LP

Table 20: Level of implementation of seven sustainability strategies

Table 21: Percent of high schools in case study LPs pursuing various strategies to sustain STC

Figures

Figure A: Geographical location of 13 case study LPs

Figure B: Typical LP organizational structure, roles, and responsibilities

Figure C: Percent of elementary and junior high/middle schools in case study LPs in which administrators report that at least half of teachers have a good understanding of STC

Figure D: Percent of elementary and junior high/middle schools in case study LPs in which administrators report that at least half of the teachers link career awareness and development activities to improved student academic preparation

Figure E: Degree to which elementary schools in case study LPs have integrated work/career-related material into academic curriculum

Figure F: Degree to which junior high/middle schools in case study LPs have integrated work/career-related material into academic curriculum

Figure G: Percent of elementary and junior high/middle schools in case study LPs that have established partnerships with one or more employers

Figure H: Conceptual model of STC participation and student outcomes

Boxes

Box I: Examples of changes in LP composition and organizational structure

Box II: Examples of strategies for creating WBL opportunities for students

Box III: Objectives of STC professional development

Box IV: Non-case study LP examples of strategies to enhance curriculum integration

Box V: Selected strategies to connect schools and businesses

Box VI: Strategies used by non-case study LPs to strengthen secondary/postsecondary connections

Box VII: Examples of LP strategies for sustaining STC

Box VIII: Examples of successful efforts to find alternative funding for STC activities

Box IX: Key conditions necessary to support STC sustainability in California

Appendices

Appendix A: Detailed methodological issues regarding sampling, weighting, and modeling for the CORE and PLUS analyses

Appendix B: Data collection instruments and protocols

1. California STC Employer/Labor Organization Survey
2. Non-Case Study LP Director Phone Interview Protocol
3. Interview Guidelines
4. Administrator Survey: Elementary School
5. Administrator Survey: Middle School
6. Administrator Survey: High School
7. Community College Interview Protocol
8. Employer/Labor Organization Interview Protocol
9. School Administrator and STC Coordinator Interview Protocol
10. Counselor Interview Protocol
11. LP Directors Interview Protocol
12. Principal Interview Protocol
13. Teacher Interview Protocol
14. Senior Survey
15. Follow-up Senior Survey

Appendix C: CORE and PLUS case study reporting format forms

1. Reporting Format: LP Level
2. Reporting Format: School Level
3. Quarterly Report #1: CORE Reporting Format Form
4. Quarterly Report #2: CORE Employer/Labor Organization Spreadsheet
5. Quarterly Report #2: CORE Reporting Format Form
6. Quarterly Report #2: PLUS Reporting Format Form
7. Quarterly Report #3: CORE Reporting Format Form
8. Quarterly Report #3: PLUS Reporting Format Form
9. Final Reporting Format Guidelines
10. Final Reporting Format

Appendix D: Tables from Senior Survey and Follow-Up Senior Survey

California School-to-Career: Helping Students Make Better Choices For Their Future

EXECUTIVE SUMMARY

A. INTRODUCTION

The School-to-Career initiative (STC) is California's concerted response to the educational improvement goals of School-to-Work Opportunities Act of 1994 (STWOA). In 1994, California's Governor appointed the STC Advisory Council, a 27-member Task Force of representatives from education, business, labor, and the Legislature, to provide recommendations for developing a statewide STC system. The Advisory Council and its committees are supported by an Interagency Partnership (IAP), which is comprised of the Employment Development Department (EDD), the California Department of Education (CDE), and the California Community Colleges Chancellor's Office (CCCCO). Beginning in 1996, California was awarded an implementation grant from the National School-to-Work Office. Over a five-year period, the State received approximately $130 million to serve as venture capital to invest in systemic education reform. In turn, much of this funding was distributed to local partnerships (LPs) because local STC efforts are seen by the State to be at the heart of a comprehensive and sustainable STC system.

In order to gauge STC's progress and impact, California's Governor, in collaboration with the IAP, contracted with WestEd and MPR Associates in 1999 to conduct a statewide STC evaluation study. This final report is the culmination of the 2-½ year evaluation study. Whereas previous reports from this statewide evaluation project focused on the broad picture of STC in California and the nation, the primary focus of this document is on case studies of 13 LPs in California. To help build the STC evaluation capacity at the local level, LPs were selected through a statewide competitive application process to conduct many evaluation activities. In total, the State awarded approximately $2 million in 2001 for these 13 LPs to conduct case study evaluations.

Although the primary focus of this final report is on the 13 LP case studies, the findings of previous reports from this statewide evaluation effort are incorporated into the report as well. Designed for policymakers, educators, parents, students, and business, labor, and community representatives who are interested in STC, this statewide evaluation strives to answer four key research questions:

1. ***What is the status of STC implementation in California?***
2. ***How has STC affected student preparation for postsecondary education and career entry?***
3. ***To what degree and in what ways has STC contributed to systemic change?***
4. ***Have STC principles penetrated the community deeply enough to be sustainable?***

Overall, the findings from this statewide evaluation indicate that certain elements of STC are taking hold in regions across the state on a fairly widespread basis, with implementation varying across LPs based on local contexts and priorities. Moreover, some promising results that require additional study are emerging, particularly concerning the effects of STC on student attitudes and behaviors. This executive summary presents highlights from the extensive final evaluation report.

B. METHODOLOGY

This evaluation of STC in California was designed to provide policymakers, educators, and other stakeholders with broad information about STC implementation and in-depth analysis of the initiative's influence on student outcomes. To achieve this goal, the study used a wide variety of qualitative and quantitative data collection and analysis methods. Several of the data collection activities cast a broad net by attempting to reach all of the LPs in California that received federal funding for STC activities under the STWOA (e.g., Employer/Labor Organization Survey; telephone interviews with non-case study LP directors). Other strategies were designed to generate in-depth data about how STC has developed in case study LPs (e.g., interviews/site visits; administrator surveys) and potentially changed the educational experience and outcomes for students (e.g., senior surveys; follow-up senior surveys; student outcomes analyses).

The IAP developed the overall framework for the evaluation. Consistent with this framework, WestEd and MPR Associates created a "nested" evaluation research design that combined efforts of their staff and local evaluators hired by the individual LPs. Specifically, the case study research activities for this statewide evaluation were divided into two parts: CORE and PLUS. The CORE research was broad and descriptive, while the PLUS activities addressed more complex issues. Out of 15 LPs that applied for evaluation funding, 13 were selected to conduct CORE case studies. Five of these 13 LPs were also selected to conduct PLUS studies. (See the box on the next page for some background information about the 13 participating case study LPs.)

The CORE case studies were designed to gather data about STC implementation from a purposive sample of LPs across the state. The overall aim of these studies was to gather and analyze comparable data on STC activities and participants (e.g., students, teachers, employers, labor organizations) from a diverse set of LPs, facilitating identification of apparent trends and patterns. LPs and their local evaluators had primary responsibility for gathering and compiling CORE case study data, using common survey instruments and reporting formats designed by WestEd and MPR Associates.

Unlike the CORE research, the PLUS analyses were under the direction of local evaluators hired by the LPs that were awarded PLUS funding. The PLUS analyses were designed by the local evaluators to answer the question, *How has STC participation affected student preparation for postsecondary education and career entry?* Each of the 5 LPs awarded PLUS funding used somewhat different statistical models and data to answer the PLUS research question. In order to assist the State in reviewing what would otherwise be five idiosyncratic reports, WestEd and MPR Associates obtained the data files from each of the PLUS sites and compared the results of similar models where possible. In 3 of the 5 PLUS analyses, evaluators were able to link student data from the CORE Senior Survey and Follow-Up Senior Survey to individual outcome measures, such as standardized test scores, cumulative grade point average (GPA), attendance, and completion of the University of California A-G admissions requirements. Since the analytic models used by local evaluators differed across LPs, WestEd and MPR Associates attempted to create similar measures of student characteristics and student outcomes in order to determine if there were any similarities in student outcomes across sites after controlling for differences in students' family and demographic characteristics.

CASE STUDY LPS

The 13 case study LPs are located in 8 of the 12 STC-defined geographic regions of the state. A few of the LPs serve predominantly small town/rural areas (e.g., North Coast STC Consortium, Sierra Regional STC Partnership) or large urban areas (e.g., San Francisco STC Partnership, UNITE-LA). Most serve some combination of urban, urban fringe, mid-size city, small town, and/or rural areas. The four largest case study LPs (in terms of K-12 student enrollment) include between 1 and 36 school districts and between 293 and 580 K-12 schools. The smaller LPs include between 1 and 33 school districts and between 29 and 186 K-12 schools. Most case study LPs work with between 1 and 4 postsecondary institutions; however, 3 work with 6 or more.

Some case study LPs started their STC efforts with federal funds, while others were in existence in some form before these funds became available. Data collected from non-case study LP directors through phone interviews suggest that LPs that were created prior to the availability of STC funding consider themselves at an advantage over those LPs that were established with STC funds. Among other factors, they have had more time than newer LPs to plan and implement various collaborative efforts, learn from their experiences, and establish relationships with other funders.

For the most part, the composition of case study and non-case study LPs appears to be consistent with STWOA recommendations and California requirements. A majority of the LPs report representation from county offices of education, K-12 school districts and schools, postsecondary institutions, and employers. Other participants in some LPs include labor organizations, workforce investment agencies, local chambers of commerce, other community-based agencies, and parents.

All case study LPs and most non-case study LPs appear to have a tiered, hierarchical organizational structure, but the organizational structure varies somewhat from LP to LP. Generally speaking, the larger the LP, the more complex their organizational structure. All LPs have a fiscal agent (usually an education entity) and many have some type of overarching governing board, one or more advisory/steering committees, an LP-level operational team (i.e., LP staff), and STC coordinators at the district and/or school levels.

The specific roles and responsibilities that LPs have assumed in coordinating and supporting STC implementation vary from LP to LP; however, they tend to fall into 8 broad categories: promoting STC; recruiting key partners and facilitating collaboration among partners; providing STC mini-grants to school districts and schools; coordinating specific STC activities that serve students; providing STC-related professional development and technical assistance; overseeing partner commitments; fulfilling STC reporting requirements; and evaluating STC initiatives.

C. MAJOR FINDINGS AND CONCLUSIONS

Described below are the major findings and conclusions from the study, using the key evaluation research questions as a frame for discussion. These findings are also summarized in the box on pages *xiv-xv* of this executive summary.

WHAT IS THE STATUS OF STC IMPLEMENTATION IN CALIFORNIA?

The findings of this study demonstrate that some key features of STC are being implemented within and across LPs in all regions of the state on a fairly widespread basis. The following are major findings with respect to the status of implementation of career development activities and programs, structural and programmatic aspects of STC, and connections with key partners.

Career Development Activities and Programs

California educators have recognized that all students, especially those from disadvantaged backgrounds, benefit from learning about careers while in school. With respect to school-based learning activities, our findings show a strong focus on helping students develop career awareness. Schools in case study LPs are building career awareness into the educational experiences of students at all grade levels, with high schools offering more extensive and varied career awareness activities than either elementary or middle schools. Virtually every high school across the case study LPs now offers career awareness activities for students. Moreover, data from the Senior Survey, representing 14,412 students across the state, show that substantial numbers of seniors participated in certain career awareness activities, such as completing interest inventories, attending career fairs, and/or listening to outside speakers (50% to 80% participation rates). California high schools appear to offer these activities to the full range of students, thus meeting the State's goal of universal access.

Career exploration, including the use of career databases and other resources, as well as individual counseling opportunities are also widespread. Twelve of the 13 case study LPs report that at least 75% of high schools offer teacher- or counselor-facilitated career exploration. Similarly, 10 LPs report that over 75% of responding high schools offer individual career counseling. However, participation of California students in more intensive types of career exploration and career-focused learning opportunities (e.g., internships, apprenticeships, participation in career academies and career majors/pathways) is much more limited. For example, in 11 out of 13 case study LPs, fewer than one-third of seniors surveyed participated in either a career academy, career major/pathway, or Tech Prep program. While career majors/pathways appear to be more prevalent in more affluent schools, schools serving low-income youth are more likely to have academies. This is not surprising, since partnership academies in California are focused on serving at-risk populations.

With respect to work-based learning (WBL) activities, data indicate that these activities are widely available to students at many case study LP high schools. Less intensive WBL activities (e.g., work site visits, job shadowing, and community service/service learning) are more frequently offered and have more student participation than the more intensive WBL activities (e.g., paid and unpaid jobs related to career majors). WBL is rarer for students in rural areas than for students in more populated areas. Minority and low socio-economic status (SES) students appear to have somewhat higher WBL participation rates than other students.

Although large numbers of schools report offering career development activities (e.g., career awareness activities, WBL, career-focused curricula), there is little evidence that coordination occurs across K-12 school levels. In contrast, 12 of the 13 case study LPs report that over 50% of participating high schools coordinate career awareness activities with postsecondary institutions, thus demonstrating a high level of collaboration. By their very nature, career awareness activities such as career fairs and programs involving outside speakers lend themselves to collaboration.

Structural and Programmatic Aspects of STC Implementation

The structural and programmatic aspects of STC examined for this evaluation are varied, including among others: attitudes and professional development opportunities for teachers and principals; curriculum integration strategies; and new graduation requirements, standards, and opportunities for certification.

Attitudes and Professional Development Opportunities for Teachers and Administrators. The attitudes of teachers and administrators and the professional development opportunities offered to these individuals are integral to any education reform, including STC. Teachers, in particular, are the gateway to change. If they are not conviced of the value of a reform effort, it will not succeed. In order to obtain rich information about teacher attitudes towards STC and opportunities for professional development within case study LPs, interviews with teachers and administrators were conducted at CORE schools. In addition, Administrator Surveys covered similar ground.

The findings from these data sources show that teachers and administrators generally hold positive views about STC. However, actual support for STC among teachers is not uniform. That is, a majority of LPs report that *academic* staff tend to view STC as an add-on to curriculum, while *career-technical* education teachers typically view STC as an integral part of education. Moreover, some case study LPs report that new teachers are more receptive to STC than those who have been teaching for longer periods of time.

With respect to professional development, the study found that high schools tend to offer teachers more professional development opportunities in STC than either middle schools or elementary schools. The percentage of high schools that offer STC-related professional development opportunities for teachers varies across case study LPs, ranging from 30% to 89%. The most common opportunities include: teacher job shadowing, internships, or mentoring; general staff development about STC; opportunities to learn to develop curriculum materials that integrate academic and career-related content; and to a lesser degree, opportunities to consult with employers on curriculum development. Clearly, many LPs do not offer professional development related to STC. Limited opportunities for STC professional development may contribute to some skepticism about the value of STC efforts.

While STC-related professional development opportunities are being offered, both teachers and administrators report that such opportunities should be more frequent and extensive. This is underscored by data from this study showing that teachers often lack detailed understanding of STC and knowledge about its implementation.

Curriculum Integration Strategies. Overall, the data show that curriculum integration of academic and career-related learning is occurring in a substantial number of case study high schools. It is not, however, widespread in elementary and junior high/middle schools. The types of curriculum integration strategies being used vary across case study and non-case study LPs. They range from introducing academic content into career-technical classes, incorporating examples from the world of work into academic classes, and creating comprehensive programs where instruction centers on career major themes. The most common strategies used are those that require limited amounts of time, resources, and collaboration, such as individual teachers developing their own contextual learning units or implementing state-provided materials that use contextual learning approaches. Less common strategies that clearly require significant resources include team teaching for academic and career-technical education teachers and block scheduling to create more time for contextual and project-based instruction. Hence, curriculum integration does not yet appear to be "systemic" (i.e., reaching all parts and levels of the educational process and affecting all people included in the process) in most schools in case study LPs. While academic/technical curricula integration is occurring at many sites, it is typically taking place in individual classrooms or within academies and not throughout entire schools.

Nonetheless, a very positive overall finding about curriculum integration is that it is reaching different kinds of schools and students (e.g., rural and urban schools, minority and non-minority students). That is, few consistent patterns regarding curriculum integration by school characteristics were observed across LPs, indicating that curriculum integration is not limited to particular types of schools and students.

New Graduation Requirements, Standards, and Opportunities for Certification. As a school reform strategy, STC calls for students to meet higher levels of achievement and skills. This entails establishing rigorous academic and workplace readiness standards and providing opportunities for students to be recognized for attaining important skills. According to the data from case study LPs, STC drives some changes in curriculum and graduation requirements, but many changes are attributable to other factors. Teachers and administrators believe that changes in graduation or curriculum requirements (e.g., increase in required units for graduation) have been driven primarily by district and state initiatives (such as changes in University of California A-G admissions requirements) that are not directly related to STC. Also, they hold mixed views about STC's influence on high academic standards. Across LPs, experienced teachers and administrators from schools with a high level of STC implementation believe that STC can help provide an impetus to raise academic standards. In contrast, teachers from schools with a lower level of STC implementation see STC as an "add-on" that has no influence on raising academic expectations or increasing student performance on standardized tests. This observation points to the importance of professional development as a means of increasing understanding and support for STC.

Connections with Key Partners

Some notable patterns have emerged across California STC efforts with respect to the connections forged between schools and key partners. Specifically, employer involvement in STC is now fairly common in schools across the state, irrespective of schools' demographic make-up. Not surprisingly, the greatest involvement of employers is at the high school level. Employers tend to participate most in low-intensity career awareness activities that require them to invest relatively limited resources. Barriers to employer involvement include lack of employer time and resources, frequent employee turnover, and the corporate bureaucracy that employers and employees must work through to secure permission to participate in STC activities. Other barriers to employer participation related to students and schools include lack of time in students' schedules for STC activities, lack of preparation of students for the workplace, and schools' focus on assessment and standards. Despite these barriers, the future of business involvement in STC appears promising. Most case study LPs report that employer involvement will either increase or stay the same in the future. In fact, many employers report they would increase their participation if schools would ask.

In contrast to employers, the case study LPs reported very limited involvement by labor organizations in STC activities, possibly reflecting conflicting viewpoints on STC goals. A host of factors dissuade labor participation, including: Occupational Safety and Health Administration (OSHA) age restrictions that limit student participation in apprenticeships and other work-site activities; students' lack of skills to participate at work locations; and perceived differences in the missions of schools and labor organizations.

The involvement of community-based organizations (CBOs) in STC shows yet a different pattern. Occasionally CBOs serve as LP leaders, but more often they only have limited presence in STC efforts. Still, all 13 case study LPs reported at least some involvement with CBOs.

Finally, many LPs report that a significant percentage of high schools in their LPs have connections with postsecondary institutions. Specifically, all 13 LPs report connections to community colleges, either by reference to a specific community college or to community college-based programs such as articulation agreements and dual credit or enrollment agreements. In contrast, connections with four-year colleges are less common. Despite the prevalence of secondary-postsecondary relationships, data suggest that many of the relationships reflect pre-STC connections rather than new, innovative strategies (such as K-16 sequencing) and are difficult to attribute directly to STC as opposed to other initiatives such as Tech Prep or University of California A-G admissions requirements. However, findings indicate that STC does provide a rationale and structure that can support existing connections between secondary and postsecondary institutions.

Teachers, administrators, and employers generally view STC-related secondary/postsecondary connections in a positive light. Specifically, administrators and teachers believe that STC can serve as a catalyst or vehicle for forging connections between secondary and postsecondary education and that STC may be changing student attitudes about going to college. Similarly, employers see STC as providing exposure for some students who may not have considered going to a community college or a four-year college and helping students make academic connections between what they learn in K-12 and their postsecondary education.

In summary, connections between STC partners appear durable, but can be strengthened. All the case study LPs report that involvement of businesses, labor organizations, CBOs, and postsecondary institutions would likely stay the same or increase in the future. Both non-case study and case study LP directors stress the integral role of STC liaisons/coordinators to help forge, build, and maintain connections between schools and businesses, in particular. Interestingly, across all types of partners, it appears that the relationships that existed prior to STC are ones that are reported as most likely to continue.

HOW HAS STC AFFECTED STUDENT PREPARATION FOR POSTSECONDARY EDUCATION AND CAREER ENTRY?

Similar to the federal approach to STW, California's leaders endorsed the STC initiative as a broad and flexible vehicle that schools and school districts could tailor to their local needs and use to help raise students' aspirations for the future and give students the tools to achieve their educational and career objectives. High schools throughout the state have responded to this flexible STC model by introducing a wide variety of configurations of STC activities. Some offer a full range of career awareness and exploration activities and enroll some proportion of students in career-focused curricula. Other schools have largely confined their STC efforts to low-intensity career awareness activities. Students have responded to the STC options provided by their schools by participating in varying combinations of STC activities.

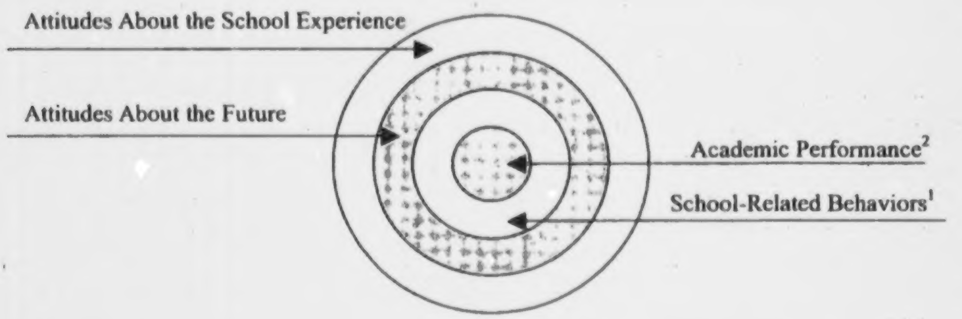
The evaluation findings indicate that STC is positively contributing to students' preparation for postsecondary education and career entry in limited but important ways. Several analyses of student outcomes were conducted by the WestEd/MPR team as well as by local evaluators from case study (primarily PLUS study) LPs to examine how STC has affected student outcomes that reflect preparation for postsecondary education and career entry. Specifically, the analyses of student outcomes explored the following hypotheses that were derived from California's STC policy statements and served as the foundation for this statewide evaluation of STC:

1. Students who participate more extensively in career awareness and career exploration (i.e., WBL) activities and those who follow a career-focused curriculum (i.e., academies, career majors/pathways, or Tech Prep) will display more positive attitudes about their school experiences; will be more engaged in learning while in high school; and will hold more positive attitudes about their preparation for the future than students who did not have these experiences.
2. Students who participate more extensively in these STC activities will display better high school academic performance records and display higher postsecondary enrollment rates.
3. Among students who choose not to continue their education immediately after high school, those who participate more extensively in various STC activities while in high school will experience more positive early employment outcomes than their peers who did not have these experiences.

Many California high schools offer a variety of career awareness and career exploration activities and involve *some* students in some type of career-focused curriculum. However, the preponderance of schools in this study have adopted only career awareness activities as a widespread and consistent part of the high school experience they deliver to *all or most* students. As a result, like any other incremental educational improvement strategy, STC can be expected to affect students gradually over a period of time and to produce some effects that are stronger and more consistent than others. Consequently, across the LPs in this evaluation, it is reasonable to expect that STC will have the most consistent influence on students' attitudes about school and about their preparation for careers—which are relatively easy to affect—and more limited effects on behavioral outcomes. Changes in academic and employment behaviors will take longer and be more difficult to shape, particularly because they also depend heavily on long-term influences, like educational experiences in elementary and junior high/middle school, and factors that are outside of schools, such as life-long socialization processes and the state of the job market.

The figure below depicts this conceptual model of how STC participation can be expected to affect student outcomes over a period of time. It shows how education reform efforts can be expected to first reach the outer rings of the target—attitudes about school experiences and how students feel about their preparation for the future; they may also, but to a lesser degree, affect behaviors that reflect engagement in school, such as attendance or taking more difficult courses; and they will ultimately, but only over a longer period of time, influence the center of the target—measures of academic performance, such as grades or standardized tests.

Conceptual model of STC participation and student outcomes


Attitudes About the School Experience
Attitudes About the Future
Academic Performance²
School-Related Behaviors¹

[1] School-related behaviors: attendance; course taking
[2] Academic performance: grades; test scores

This conceptual model was used to structure the analyses of student outcomes. The major findings of these statistical analyses are as follows.

STC's Influence on Attitudes about the School Experience

STC participation appears to help students develop positive attitudes about school. Specifically, students with more intense STC participation were more likely to know about and value career-related activities at their schools and to feel prepared for future employment. In fact, all types of STC activities (i.e., career awareness, career exploration, and career-focused curricula) frequently enhanced students' beliefs that their schools had provided opportunities to learn the skills that were necessary for career success.

STC's Effect on Students' Confidence About their Preparation for the Future

STC participation helps students know how to prepare for successful future careers, including the skills, education, and training that are needed for career success. However, it does not appear to have a clear effect on enhancing students' confidence about reaching their career goals or on their beliefs that they were well prepared to continue their education. Most students in this study appear to be confident about reaching their career goals irrespective of their STC participation.

STC Participation's Influence on Student Engagement

STC has important positive effects on students' engagement in school. Students generally report that STC activities have made school more interesting and helped them understand the importance of excelling in their studies. Career awareness activities, in particular, can play an important role in helping students see the value of high academic achievement. Moreover, findings from the PLUS studies indicate that STC participation can have positive effects on student attendance as well.

STC Participation's Influence on Students' Academic Performance in School and Experiences After High School

Not surprisingly, given the previously-described conceptual model related to behavioral change coupled with the short time-frame in which STC has had to operate, STC participation does not yet appear to have consistent positive effects on indicators of student academic achievement. When examining the case study data as a whole, there appears to be no consistent pattern suggesting that STC has an impact on either standardized test scores or cumulative grade point average. Similarly, the results of this study show there were few systematic postsecondary effects across LPs associated with participation in STC activities after controlling for student background characteristics such as parents' education, race/ethnicity, gender, and a measure of prior academic achievement. That is, *across LPs*, STC participation was found not to systematically affect preparation for postsecondary education, enrollment in postsecondary education, or employment after graduation. An examination of *individual* PLUS case study data, however, indicates that some LPs found positive effects were found using analytic models with variables specific to that LP, or analyses that examined outcomes separately for some groups. Thus, there is suggestive evidence that STC may have a positive effect on preparation for postsecondary education. For example, in two PLUS LPs, students who self-reported participating in a career-focused curriculum had a greater likelihood of fulfilling the University of California A-G admissions requirements compared to those who did not report participation. Similarly, one PLUS study demonstrated that participating in a career-focused curriculum leads more students to complete Algebra II. Finally, it is important to note that based on findings from the PLUS analyses, STC participation did not have negative effects on students' academic achievement in high school or on postsecondary outcomes.

HOW HAS STC CONTRIBUTED TO SYSTEMIC CHANGE?

Perhaps the most significant contribution of STC to systemic change is a clear shift toward greater focus on career awareness as a key element of the education experience provided to students. In some ways, this finding is not surprising since compared to the range of possible STC activities, career awareness activities are much easier to infuse into the curriculum than other more intensive activities. Moreover, investing in career awareness activities is less costly than supporting new instructional delivery models, such as academies. Finally, career awareness is the arena of STC activities in which employers are more likely to become and remain engaged.

Even though career awareness activities are considered low-intensity STC activities, they have demonstrated important constructive effects on particular student attitudes and behaviors. A major finding from this study is that simply increasing the number of career awareness activities that students engage in positively affects students' attitudes about their school experience. The implications of this key finding are considerable. First, they validate what many LPs and schools are already doing, verifying the effectiveness of offering career awareness activities to the full range of students. In particular, LPs and schools with limited STC resources should be heartened by this empirical finding that investing in career awareness activities (as opposed to the more expensive intensive activities) is a worthwhile strategy with demonstrated impact.

Second, other systemic STC features can be built upon the foundation provided by career awareness activities. For example, a strategic, yet comprehensive STC approach may be to target career awareness activities (e.g., interest inventories, guest speakers) to the full range of students, while selectively targeting the more intensive career exploration (e.g., internships and apprenticeships) and career-focused learning opportunities (e.g., academies or majors/pathways) to self-selected groups of students.

IS STC SUSTAINABLE?

Sustainability is a particularly salient issue for STC efforts, given the State's legislative commitment and vision of STC as encompassing *long-term* structural change and system building. However, the limited time frame and resources of the national and state STC movement make it unrealistic to expect that the systemic changes envisioned for STC would be completed at this time. Nonetheless, it is important to examine the progress made to date by California LPs in the direction of sustainable systems.

LPs across the state have been thinking seriously about how to sustain an STC system in California, given the sunsetting of STWOA funding and the availability of limited State support. More importantly, many LPs are taking strategic steps to sustain and expand the effort expended to date. Data from both case study and non-case study LPs suggest that LPs are pursuing a wide variety of strategies to sustain STC activities. Generally speaking, these strategies fall into six broad categories, as shown below:

- **Building support for STC and competence in STC implementation among key stakeholders**
    - Communicating regularly with key stakeholders about STC
    - Providing STC-related professional development opportunities and resource materials to key stakeholders (e.g., teachers, administrators, employers)
- **Recruiting multiple business partners and building solid working relationships between schools and employers**
    - Forming business in education organizations or committees responsible for recruiting business partners and linking them with schools
    - Forming industry-specific learning collaboratives (i.e., networks of educators and business/industry representatives who work together to plan and implement STC efforts and share best practices)
    - Making an LP staff person and/or district and school STC coordinators responsible for building and managing connections between schools and employers
    - Inviting employers to participate on STC governing and advisory bodies
    - Creating databases with directories of employers and available work-based positions, as well as interactive links to other career-related sites or other educational institutions
- **Making programmatic changes that support the implementation of STC**
    - Creating and/or expanding career academies and majors/pathways
    - Purchasing STC-related materials and equipment for classrooms, libraries, and career centers (e.g., career assessment software, books that describe different careers, computers)
- **Making structural changes that support the implementation of STC**
    - Developing alternative scheduling (e.g., block scheduling) to accommodate WBL
    - Restructuring teacher schedules to allow for collaboration and team-teaching
    - Building STC into required curriculum and/or graduation requirements
    - Designating STC coordinators at the school and/or district levels to promote STC and oversee STC implementation (including forming and nurturing relationships with business partners)

- **Finding alternative sources of funding for STC efforts**
    - Transferring financial (and coordination) responsibility for various STC activities from the LP to county offices of education, school districts, and schools
    - Partnering with CBOs, postsecondary institutions, and various educational and workforce development programs to leverage existing resources (e.g., ROP, Tech Prep, WIA youth activities) to support STC efforts
    - Applying for grants to support implementation of STC
- **Being selective about which STC efforts to sustain**
    - Using remaining STC seed funding to 1) identify those STC activities, practices, and/or programs that show the most promise of "lasting into the future" and 2) find ways to sustain those activities, practices, and/or programs

Although all case study LPs are engaged in some activities aimed at sustaining STC, efforts to sustain STC vary from one LP to another; there appear to be no distinct patterns in the key strategies being implemented to sustain STC across the 13 case study LPs based on school characteristics such as urbanicity, percent of students receiving free and reduced meals, percent of families in CalWORKS, and percent of minority students. Moreover, data from the high school Administrator Survey indicate that school-level efforts to sustain STC are not widespread within the 13 case study LPs. Less than 50% of high schools in most case study LPs are pursuing major strategies for sustaining STC.

With respect to the aspects of STC that are most likely to be sustained in the future, the data suggest that while some aspects of STC appear to be firmly entrenched in the state's education system, others remain isolated and touch the lives of relatively few students. Specifically, the findings indicate a clear shift towards making career awareness a key element of students' education experience at all education levels. As such, it is likely that low-intensity career awareness activities that are relatively easy and cost-effective to implement (e.g., career assessments, guest speakers in classrooms, field trips to work sites, Groundhog Job Shadow Day) will continue to be offered in many schools. The future of more intense STC activities and programs is less certain. While student participation in community service and service learning is relatively common, participation in other career exploration activities such as mentoring experiences, internships, and apprenticeships is relatively low in most schools. And, while most LPs claim to have provided professional development opportunities related to curriculum integration, it does not appear that a majority of students are exposed to meaningful integrated curriculum on a regular basis.

Generally speaking, STC seems to have penetrated high schools more than elementary or junior high/middle schools. Within high schools, however, there is great variation in the degree to which STC has been incorporated into the fabric of the education experience. Overall, few high schools have made significant progress toward making STC systemic; the majority do not seem to offer the range, depth, or combination of career awareness and exploration activities and career-focused curriculum needed to provide all students with a comprehensive STC experience. However, the findings suggest that even low-intensity STC activities can have important payoffs for students' attitudes about, and engagement in, school.

There are a number of different factors that are making it challenging for LPs to implement and sustain STC activities and programs. Among the most daunting barriers are limited support for STC among some key stakeholders; turnover of leadership at various levels; limited time and money; lack of teacher knowledge about how to implement STC curriculum elements; and cumbersome, time-consuming reporting requirements.

Finally, the findings of this evaluation study suggest that several key conditions are necessary to support sustainability of STC in California. LPs should be aware of the key conditions listed below as they continue to build upon their STC successes.

Key conditions necessary to support STC sustainability in California

- A shared vision among key stakeholder groups that STC is valuable for all students and can play a role in improving student performance.
- Strong and consistent leadership at the school, district, LP, and State levels, able to effectively communicate the STC vision and work diligently to create a place for STC among the State's educational priorities.
- Presence of structural elements that support STC implementation, including individuals or teams within districts and/or schools (e.g., STC coordinators) to champion STC and oversee implementation efforts, school and teacher schedules that support the development and implementation of meaningful career-focused curriculum and WBL opportunities, and curriculum and graduation requirements that include career-related components.
- Sufficient funding for continued implementation of key STC activities, including professional development, outreach to employers, WBL, operation of existing career academies (and development of new academies and majors/pathways if possible), and other meaningful curriculum integration efforts.

Different kinds of support are now available to help LPs attain STC sustainability. These include key state legislation (e.g., AB 1873 which makes state funding available to help LPs build upon and expand STC activities); "grass roots" and constituent networks dedicated to the success and sustainability of STC efforts (e.g., California School-to-Career Action Network and the Association of California School Administrators/California County Superintendent's Educational Services Association STC Task Force); and the recent amendment to California's school accountability report card to include "the degree to which pupils are prepared to enter the workforce." Moreover, California's Master Plan recommends the "explicit infusion of a school-to-career concept in public schools, colleges, and universities to provide students with clear curricular and career guidance about the range of post high school options for which they can aspire."[1]

In summary, California is making important strides towards sustaining STC. However, STC is not yet a comprehensive reform approach that engages all students. Although the sustainability of an STC system in California is not supported by the findings of this statewide evaluation, the findings do suggest that some key STC elements, such as widespread access of students to career awareness activities, are likely to be sustained based on local needs and efforts.

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[1] California Master Plan, July 2002 (Draft).

SUMMARY OF KEY FINDINGS

Career Development Activities and Programs

- Schools in case study LPs are making a concerted effort to build career awareness into the educational experiences of a full range of students at all grade levels, with high schools offering more extensive and varied career awareness activities (e.g., interest inventories, career fairs, outside speakers) than either elementary or middle schools.
- Participation of students in intensive career exploration and career-focused learning opportunities (e.g., internships, apprenticeships, participation in career academies and career majors/pathways) is much more limited than participation in career awareness activities.
- Work-based learning activities (WBL) are widely available to students within many case study high schools, with less intensive activities (e.g., work site visits, job shadowing, community/service learning) being more common than more intensive WBL activities (e.g., paid and unpaid jobs related to career majors).
- There is little evidence that coordination of career development activities occurs consistently across K-12 school levels. However, coordination between secondary and postsecondary institutions appears more robust.

Structural and Programmatic Aspects of STC Implementation

- ***Teacher and Administrator Attitudes:*** Teachers and administrators generally hold positive views about STC, however, actual support for STC among teachers is not uniform. Academic staff tend to view STC as an "add-on" to curriculum, while career-technical education teachers typically view STC as an integral part of education.
- ***Professional Development Opportunities for Teachers and Administrators:*** High schools tend to offer teachers more professional development opportunities in STC than either middle schools or elementary schools. The most common professional development opportunities offered at this level include: teacher job shadowing, internships, or mentoring; general staff development about STC; and opportunities to learn to develop curriculum materials that integrate academic and career-related content. Both teachers and administrators report that STC-related professional development opportunities should be more frequent and extensive.
- ***Curriculum Integration Strategies:*** Curriculum integration of academic and career-related learning does not yet appear to be "systemic" in most schools in case study LPs. It is much more common in high schools than elementary and junior high/middle schools and typically takes place in individual classrooms or within academies rather than throughout entire schools (though it is not limited to particular types of schools and students). The most common curriculum integration strategies are those that require the least amount of time, resources, and collaboration (e.g., individual teachers developing their own contextual learning units or implementing state-provided materials that use contextual learning approaches).
- ***New Graduation Requirements, Standards, and Opportunities for Certification:*** Teachers and administrators believe that changes in graduation or curriculum requirements (e.g., increases in required units for graduation) have been driven primarily by district and state initiatives that are not directly related to STC, such as changes in the University of California A-G admissions requirements. Teachers and administrators from schools with a high level of STC implementation believe that STC can help provide an impetus to raise academic standards, while those from schools with a lower level of STC implementation see STC as having no influence on raising academic expectations or increasing student performance on standardized tests.

Connections with Key Partners

- ***Employers:*** Employer involvement in STC is now fairly common in schools across the state, irrespective of schools' demographic make-up, and is likely to increase or stay the same in the future. Employers are most involved at the high school level and in low-intensity career activities that require them to invest relatively limited resources.
- ***Labor Organizations:*** Labor organization involvement in STC activities is very limited for a variety of

reasons such as OSHA age restrictions that limit student participation in apprenticeships and other work-site activities, students' lack of skills to participate at work locations, perceived differences in the missions of schools and labor organizations.

- ***Community-Based Organizations:*** All case study LPs reported some involvement with CBOs. These organizations sometimes serve as LP leaders, but more often have only a limited presence in STC efforts.
- ***Postsecondary Institutions:*** A significant percentage of high schools within case study LPs have connections with postsecondary institutions, with connections to community colleges being more common than connections to 4-year colleges. Findings indicate that STC provides a rationale and structure that can support existing connections between secondary and postsecondary institutions.

Effects of STC on Student Preparation for Postsecondary Education and Career Entry

- STC participation helps students know how to prepare for successful careers, but does not appear to have a clear effect on students' confidence about reaching their career goals or on their beliefs that they were well prepared to continue their education.
- Students generally report that STC activities have made school more interesting and helped them understand the importance of excelling in their studies. Even increasing the number of career awareness activities that students engage in positively affects students' attitudes about school and engagement in learning. STC participation has also had positive effects on student attendance and preparation for postsecondary education.
- STC participation does not yet appear to have consistent positive effects on indicators of student achievement (i.e., standardized test scores and cumulative grade point average).
- When examining case study data as a whole, there were few consistent, systematic postsecondary effects associated with participation in STC activities after controlling for student background characteristics. However, individual PLUS case study data provide some evidence that STC can have a positive effect on preparation for postsecondary education (i.e., positive relationships between participation in career-focused curriculum and completion of University of California A-G requirements and completion of Alegebra II in two PLUS LPs and one PLUS LP respectively).

Systemic Change and Sustainability of STC

- California is making important strides towards sustaining STC, however, STC is not yet a comprehensive reform approach that engages all students.
- LPs are pursuing a wide variety of strategies to sustain STC activities, however, efforts to sustain STC are not widespread within individual school in the 13 case study LPs. Specifically, less than 50% of high schools within most case study LPs are pursuing major strategies for sustaining STC.
- Perhaps the most significant contribution of STC to systemic change is a clear shift toward a greater focus on career awareness as a key element of the education experience provided to students. The future of more intense STC activities and programs is less certain.
- A number of different factors are making it challenging for LPs to implement and sustain STC, including limited support among some key stakeholders (i.e., labor organizations, CBOs), turnover of leadership at various levels, limited time and money, lack of teacher knowledge about how to implement STC activities and curriculum elements, and cumbersome, time-consuming reporting requirements.
- Several key conditions appear necessary to support sustainability of STC in California, including 1) a **shared vision** among key stakeholder groups that STC is valuable for all students and can play a role in improving student performance, 2) **strong and consistent leadership** at the school, district, LP, and State levels, 3) the presence of **structural elements that support STC implementation** (e.g., STC coordinators to champion STC and oversee STC implementation efforts within schools and districts; school and teacher schedules that support the development and implementation of meaningful career-focused curriculum and WBL opportunities; curriculum and graduation requirements that include career-related components), and 4) **sufficient funding** for continued implementation of key STC activities.

D. RECOMMENDATIONS

Offered below are recommendations for sustaining and expanding the reach of STC in California.

DEMONSTRATE HOW STC FITS INTO AN EDUCATION SYSTEM THAT IS FOCUSED ON SCHOOL ACCOUNTABILITY

A pervasive theme echoed by teachers, administrators, and LP directors interviewed within and across LPs is that the concerted attention given to high-stakes testing and accountability in California schools detracts from other education reform efforts, including STC. In this environment, schools and teachers need to understand how STC can support increased student achievement relative to important standards before they can fully embrace STC. This calls for a well-articulated vision of STC and its significance to student achievement that is persuasive to schools and teachers. This vision must be supported by convincing evidence of the impact of STC on students. For example, this study found that STC has positive effects on students' attitudes about school and engagement in learning. There is additional evidence that STC positively impacts attendance and preparation for postsecondary education as measured by increased completion of University of California A-G admissions requirements. The positive findings from this evaluation should help more key stakeholders recognize the potential of the initiative. With a clearly articulated STC vision and evidence of its impact on students, schools and teachers are more likely to view STC as a means for engaging students and improving their learning rather than as an "add on" that takes time away from their efforts to increase students' standardized test scores.

PROMOTE THE STC VISION

Once an STC vision has been articulated it needs to be aggressively promoted at the state and local levels. STC needs a strong voice to aggressively and strategically make the case for the importance and relevance of STC principles to the overall vision of education reform in California. The findings from this study that demonstrate the promise of STC in terms of improved student attitudes towards school, engagement in their studies, and increased attendance could be used to support and promote the vision. Promotion of the STC vision by knowledgeable and authoritative voices would give credibility to local STC efforts and the "boost" that locals need as they attempt to expand STC participation by students, teachers, employers, labor organizations, CBOs, and postsecondary institutions. Promotion by state and local leaders may help teachers, in particular, become more familiar with the philosophy and purposes of STC, and thus be more inclined to support STC efforts.

IMPLEMENT A STATEWIDE STUDENT DATA TRACKING SYSTEM

Both the local and statewide evaluation efforts that contributed to this study were hampered by the unavailability or limited availability of student level data. Although it is important to protect student privacy, there is clearly a need for a comprehensive student data system in order to better monitor and evaluate the impact of STC and other reforms on schools and students. This will allow for future comprehensive studies that follow-up on promising STC implementation and sustainability practices that have been suggested by the current study. On a positive note, there has been a statewide effort underway for the last several years to develop and implement a comprehensive student information system. California's Student Information System (CSIS) is currently being pilot-tested in 149 school districts across the state. This system will contain key student data—such as program participation, courses, grades, standardized test scores—that are necessary for conducting rigorous studies of STC's impact on students. What CSIS will not provide are data on students after they leave the K-12 system. Thus, studies of STC's impact on students after they leave high school will depend on cooperation across California's education sectors to build an integrated data system.

PROVIDE LEADERSHIP AND SUPPORT FOR SYSTEM-BUILDING INITIATIVES

The results of this evaluation study underscore the importance for policymakers to take a long-term perspective on new, promising reforms, such as STC. Reform takes time. A longitudinal view is important to allow for proper implementation of a comprehensive reform strategy and examination of its impact. As indicated by this study's findings, STC's system-building needs over the long term include professional development, funding resources, strategic partnerships, as well as structural and programmatic changes.

Hands-on leadership is necessary to ensure progress towards long-term goals. Local efforts clearly need strong guidance and support to develop and sustain STC. The State can provide such leadership by aggressive information collection and dissemination of "best practices."[2] Local efforts would also benefit from regular monitoring of progress towards full implementation of STC in order to ensure that midcourse corrections can be made, as necessary.

Finally, effective leadership for system-building initiatives must meaningfully connect STC to other related career-technical educational initiatives, such as California Partnership Academies, Tech Prep, ROP, and community and service learning. These connections could serve to leverage and strengthen each individual initiative. More importantly, the connections should weave a more comprehensive network in support of career-related education in California.

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[2] American Youth Policy Forum & Center for Workforce Development, 2000.

CHAPTER I
INTRODUCTION

BACKGROUND

The School-to-Career initiative (STC) is California's concerted response to the educational improvement goals of School-to-Work Opportunities Act of 1994 (STWOA). Aimed at maximizing students' postsecondary education and career options, STC comprises a statewide reform effort to improve the education system by providing all students with strong academic preparation and career guidance reinforced in real-world and work-related contexts.

In 1994, California's governor appointed the STC Advisory Council, a 27-member Task Force of representatives from education, business, labor, and the Legislature, to provide recommendations for developing a statewide STC system. The Advisory Council and its committees are supported by an Interagency Partnership (IAP), which is comprised of the Employment Development Department (EDD), the California Department of Education (CDE), and the California Community Colleges Chancellor's Office (CCCCO).

Beginning in 1996, California was awarded an implementation grant from the National School-to-Work Office. Over a five-year period, the State received approximately $130 million to serve as venture capital to invest in systemic education reform. The State has used this money to provide incentives for stakeholders to form partnerships and implement ongoing STC-based efforts in conjunction with other education and workforce initiatives.

In order to gauge STC's progress and impact, California's governor, in collaboration with the IAP, contracted with WestEd and MPR Associates to conduct a statewide evaluation study. Since its inception in December 1999, this statewide evaluation effort has generated several key documents related to STC in California, including:

- a White Paper describing the national and state status of STC;
- a report summarizing the results of the statewide survey of employers and labor organizations participating in local STC activities; and
- an interim evaluation report describing work in progress and initial findings.

These deliverables have set the stage for the current document, which is the culmination of the 2-½ year evaluation study.

Whereas some of the previous reports from this statewide evaluation project focused on the broad picture of STC in California and the nation, the primary focus of this final report is on case studies of selected local partnerships (LPs). To help build STC evaluation capacity at the local level, the State awarded approximately $2 million in 2001 through a statewide competitive application process, for 13 LPs to conduct case study evaluations (see Chapter III for detailed information on these LPs).

The case study research activities for this statewide evaluation were divided into two parts: CORE and PLUS. The CORE study aimed to gather and analyze comparable data from a diverse set of LPs on STC activities and participants (e.g., students, teachers, employers, labor organizations), facilitating identification of apparent trends and patterns. In contrast, the PLUS evaluation activities focused specifically on the following research question: ***How has STC participation affected student preparation for postsecondary education and career entry?*** Thirteen LPs (out of 15 that applied for funding) conducted CORE case studies. Five of these 13 LPs also conducted PLUS studies. (LPs could apply for CORE funding or CORE and PLUS funding. However, LPs could not apply for PLUS funding alone.) Altogether, the LP case study activities examined the following: local implementation progress to date; the influence of STC involvement on student outcomes; the contribution of STC to systemic change; and the potential for sustaining local STC systems.

As the statewide evaluation team, WestEd and MPR Associates designed a common framework for the local evaluations and had oversight responsibility for key aspects of their evaluation work. LPs were responsible for collecting specific data to inform the overall statewide evaluation study of STC, but could also shape their studies to address some of their own local purposes and needs.

The decision to focus on LP case studies in the statewide evaluation of STC in California was driven by several considerations. First, STC is distinguished from other education and workforce development reform initiatives through its overarching goal of system building. Recent research at the national and state levels has determined that the complicated nature of systems building represents a unique challenge of STC implementation.[3] As individual LPs provide the foundation of STC system building, in-depth investigations of these local collaborations are critical to understanding the underpinnings of a STC system in California.

Second, just as STWOA allowed for great flexibility in the ways states implemented reforms, California's LPs were allowed to vary substantially in the structure and activities they undertook in support of STC. The resulting variety of local STC efforts requires a systematic and careful examination of selected local examples in order to determine the necessary conditions for and the common obstacles to STC implementation as well as to identify what it takes to mold and sustain STC efforts under varying circumstances.

Finally, although the timeframe to gather national or state data on the impact of STC has been somewhat limited by the recent sunsetting of STWOA, several studies have attempted to identify effective practices.[4] By investing sufficient resources and focusing concerted attention on a manageable number of local sites, California's STC case studies have the potential to uncover promising STC strategies that are actually occurring, thus confirming or adding to the understanding of STC strategies cited in the existing literature.

Although the primary focus of this final report is on the LP case studies, the findings of other key components of the statewide evaluation effort are incorporated into this report as well (see Table 1). Among others, these study components include the statewide survey of California employers and labor organizations and interviews with LP directors across the state (i.e., directors of those LPs not included in the case studies).

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[3] American Youth Policy Forum & Center for Workforce Development, 2000; Hershey, et al., 1999; Hughes, et al., 2001; Kemple & Snipes, 2000.
[4] Ibid.

This document is designed for policymakers, educators, parents, students, and business, labor, and community representatives who are interested in STC. It strives to answer four research questions of interest posed at the onset of this study:

5. ***What is the status of STC implementation in California?***
6. ***How has STC affected student preparation for postsecondary education and career entry?***
7. ***To what degree and in what ways has STC contributed to systemic change?***
8. ***Have STC principles penetrated the community deeply enough to be sustainable?***

HOW THE REPORT IS ORGANIZED

The remainder of this report contains the 7 chapters described briefly below.

II. **Methodology**
Describes the methodology for the overall evaluation design. Presents the rationale for the various evaluation methodologies, including how they supplement and complement each other and how they address the research questions of interest.

III. **LP Composition, Organizational Structure, and Overall Roles and Responsibilities in STC Implementation**[5]
Introduces the 13 case study LPs and describes the composition and organizational structure of LPs around the state. Also discussed are the primary roles and responsibilities that LPs have assumed in coordinating and implementing STC and the types of support they have received from the Interagency Partnership, consisting of the California Department of Education, California Community Colleges Chancellor's Office, and the Employment Development Department.

IV. **Career Development Activities and Programs**
Examines the degree to which schools are offering—and students are participating in—various types of career development activities and programs, including career awareness activities, work-based learning opportunities, and career-focused curricula.

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[5] Chapters III through V present major findings based on analyses across the CORE case studies and data collected from telephone interviews with non-case study LP directors, highlighting the trends and patterns that were discerned from cross-LP analyses and syntheses of data.

V. **Structural and Programmatic Aspects of STC Implementation**
Describes findings related to key structural and programmatic aspects of STC that support implementation of career development activities and programs. These include:

- attitudes and professional development of teachers and administrators;
- curriculum integration strategies;
- new graduation requirements, standards, and opportunities for certification; and
- connections with business, labor organizations, community-based organizations, and postsecondary institutions.

VI. **Student Outcomes**
Focuses on the relationship between STC and student outcomes, presenting major findings from analyses of data from both the CORE and PLUS case studies. The findings address the following questions:

- Do students who participate more extensively in career awareness and career exploration activities and those who follow a career-focused curriculum display more positive attitudes about their school experiences, show more engagement in learning while in high school, and hold more positive attitudes about their preparation for the future than students who do not have these experiences?

- Do students who participate more extensively in STC activities display better high school academic performance records and higher postsecondary enrollment rates than students who do not have these experiences?

- Do students who participate more extensively in various STC activities (and choose not to continue their education immediately after high school) experience more positive early employment outcomes than similar students who do not have these experiences?

VII. **Sustainability of School-to-Career Efforts**
Presents findings related to the sustainability of STC in California.

VIII. **Conclusions**
Offers conclusions and specific policy recommendations based on the findings of this study.

CHAPTER II
METHODOLOGY

OVERVIEW

The statewide evaluation of STC in California was designed to provide policymakers, educators, and other stakeholders with broad information about STC implementation and in-depth analysis of the initiative's influence on student outcomes. To achieve this goal, the study used a wide variety of data collection and analysis methods, some qualitative and others quantitative. (See Table 1, which shows the major components of the study, the types of research methods used, and the parties with primary responsibility for each component.)

Several of the data collection activities, such as phone interviews with non-case study LP directors, cast a broad net by attempting to reach most, if not all, of the LPs in California that received federal funding for STC activities under the STWOA. The bulk of the evaluation activities, however, were components of CORE and PLUS case studies of 13 LPs. These activities were designed to generate in-depth data about how STC has developed in case study LPs and potentially changed the educational experience and outcomes for students in their partnerships. (See Appendix A for detailed information about sampling, weighting, and modeling issues related to the CORE and PLUS analyses.)

Table 1
Major elements of the California School-to-Career Evaluation: research methods and organizational responsibilities, by study component

Study Component	Research Methods	Design Responsibility	Data Collection Responsibility	Analysis Responsibility
Employer/Labor Organization Survey	Quantitative	WestEd and MPR Associates	WestEd and MPR Associates	WestEd and MPR Associates
Phone Interviews with Non-Case Study LP Directors	Qualitative	WestEd and MPR Associates	WestEd and MPR Associates	WestEd and MPR Associates
Examination of Extant Sources	Qualitative	WestEd and MPR Associates	WestEd and MPR Associates	WestEd and MPR Associates
CORE Case Studies				
(1) Group and Individual Interviews/Site Visits	Qualitative	WestEd and MPR Associates	LPs/Local Evaluators	LPs/Local Evaluators, WestEd, and MPR Associates
(2) Administrator Surveys	Quantitative	WestEd and MPR Associates	LPs/Local Evaluators	LPs/Local Evaluators, WestEd, and MPR Associates
(3) Senior Survey	Quantitative	WestEd and MPR Associates	LPs/Local Evaluators	LPs/Local Evaluators, WestEd, and MPR Associates
(4) Follow-Up Survey	Quantitative	WestEd and MPR Associates	LPs/Local Evaluators	LPs/Local Evaluators, WestEd, and MPR Associates
PLUS Case Studies				
(1) Site Visits	Qualitative	LPs/Local Evaluators	LPs/Local Evaluators	LPs/Local Evaluators
(2) Student Outcomes Analysis	Quantitative	LPs/Local Evaluators	LPs/Local Evaluators	LPs/Local Evaluators, WestEd, and MPR Associates

The IAP created the overall framework for the evaluation. The IAP wanted to involve LPs actively in the STC evaluation process to encourage them to include evaluation activities in their future work. This requirement led WestEd and MPR Associates to create a "nested" evaluation research design that combined efforts of their staff with those of local evaluators hired by the LPs to develop collaborative evaluation proposals.

WestEd and MPR Associates were responsible for creating the final evaluation design, establishing the data collection procedures, and creating nearly all of the data collection instruments for the CORE evaluation. To assist in this process, WestEd received ongoing feedback from a Practitioners Panel, composed of a 5-member Steering Committee and a 10-member Technical Review Committee. Actual data collection and analysis responsibilities for the CORE case studies were shared between WestEd and MPR Associates and the LP case study evaluators.

In contrast to the CORE case studies, the research designs, data collection instruments, and analysis methods for the intensive PLUS studies were the responsibility of the 5 individual LPs and their local evaluators who participated in this specialized evaluation effort. (See Appendix B for a copies of all data collection instruments and protocols.)

THE EMPLOYER/LABOR ORGANIZATION SURVEY

The Employer/Labor Organization Survey conducted for this evaluation was the first statewide effort aimed at obtaining information about the prevalence and character of employer and labor organizations' participation in supporting local STC efforts. The survey was conducted between May 12 and June 15, 2000. (See Appendix B for a copy of the survey instrument.) It was administered to more than 2,300 employers and 102 labor organizations statewide via a mail survey. Surveys were mailed to employers and labor organizations from lists provided to WestEd and MPR Associates by various LPs.[6] The employer sample was stratified by the LPs, and a percentage of each employer list was randomly selected for participation. All labor organizations were included in the sample. Approximately 19% of these employers and 24% of the labor organizations returned useable survey forms.

The survey was designed to gather information about employers and labor organizations that participated in STC activities and those who were invited to participate but did not. The latter group was included to help us understand why some employers have decided not to participate in STC activities. LPs were asked to classify these organizations according to three levels of involvement in STC:

- *High*: The employer/labor organization had participated in one or more student/educator activities of its LP and is (or was) involved in organizing STC activities or in recruiting other employers/labor organizations.
- *Moderate*: The employer/labor organization participated in one or more student/educator activities but did not help organize activities or recruit other employers/labor organizations.

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[6] Lists with contact information for employers were provided from 34 LPs across the state; 19 LPs provided contact information for labor organizations. These lists included paper and electronic files.

- *Recruited, But Had Not Participated*: The employer/labor organization was recruited by a LP (e.g., invited to an organizational meeting, sent a mailing asking for employer/labor organization involvement, asked to provide job-shadowing opportunities) but had not participated in any actual activities.

INTERVIEWS WITH NON-CASE STUDY LP DIRECTORS

Telephone interviews of LP directors who were not participating in case study research (non-case study LP directors) were conducted in fall 2001. In the original evaluation design, WestEd and MPR Associates planned to develop and administer a survey to all LP directors throughout the state. While surveys are typically a cost-effective and efficient data collection strategy, the usefulness of the resulting data depends on achieving an adequate response rate. Given California LPs' relatively low response rate to previous STW-related surveys (e.g., 1998-1999 Progress Measures Survey), a decision was made (and approved by the IAP) to conduct telephone interviews rather than administer a survey. The interview focused on anticipated changes in LP funding, structure, and implementation after STWOA sunsets. (See Appendix B for a copy of the non-case study LP director interview protocol.) Although more time- and labor-intensive, these telephone interviews resulted in better response rates than previous STW surveys, with 38 of the 44 LPs (86%) completing interviews.[7] Data gleaned from these interviews supplement information gathered from the CORE case studies and provide a broader picture of STC in California.

SYNTHESIS OF DATA FROM EXTANT SOURCES

Over the course of this evaluation, WestEd and MPR Associates examined existing sources of data for evidence related to this evaluation's questions of interest. Three sources of data for this aspect of the study included the National School-to-Work Progress Measures Survey, narrative quarterly reports completed by LPs for the State, and evaluation reports conducted by LPs not participating in case study research.[8] Analyses of extant data sources enable us to make meaningful comparisons and examine growth or other trends of STC activity within and across LPs.

CORE CASE STUDIES

As part of the competitive application process, LPs and their evaluators prepared a list of all high schools in their LP. These schools were classified into strata ("high," "other," or PLUS STC implementation) by the evaluators according to the extent of STC activities at each school. (PLUS schools were the same as "high" schools in terms of their STC activities, but were identified separately as possible sites for the PLUS case studies.)

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[7] On average, each interview lasted approximately 45 minutes. With the permission of interviewees, interviews were recorded and transcribed. Data were then analyzed using Atlas-TI, a program used to analyze qualitative data.

[8] An anticipated fourth data source was the Local Partnership Survey, conducted by Mathematica Policy Research. However, contrary to expectations, that survey was not administered in fall 2000. Instead, the National School-to-Work Office requested that more extensive data be collected from state-level School-to-Work directors and a small sample of Local Partnerships.

Recognizing that the definition of "high implementation" schools was a somewhat subjective process (because LPs, school districts, and individual schools have been encouraged to implement STC systems and activities in ways that meet their own local needs), LPs were instructed to use existing data and knowledge to make judgments about high schools meeting or not meeting several criteria provided to assist their thinking. These criteria were based on the National Evaluation of School-to-Work Implementation Local Partnership Survey and are listed in Appendix A.

Once these lists of "high" and "other" schools were submitted by each LP, WestEd and MPR Associates generated a stratified random sample of high schools for each LP that was awarded case study funds. (These schools are identified throughout this report as CORE schools.) Each sample resulted in overrepresentation of schools identified as "high" STC implementation. Such oversampling ensured sufficient representation of high schools with robust STC activities, and at the same time, allowed for generalization of findings across a given LP.

One of the primary objectives of the CORE analyses was to provide comparable data across LPs about student participation in STC. Consequently, LP evaluators were required to use instruments and data analysis techniques that were standardized across CORE LPs. (See Appendix B for copies of the CORE case study data collection instruments and protocols and Appendix C for copies of CORE case study reporting format forms.) For this part of the evaluation, LPs and their local evaluators had primary responsibility for gathering and compiling data, which included the following:

- School Site Interviews. At each high school identified as a CORE site, evaluators conducted a series of interviews and/or focus groups of counselors, principals, other administrators (e.g., STC Coordinator), teachers, and key school site staff.
- Postsecondary Representatives Interviews. Each LP conducted extensive interviews with appropriate postsecondary representatives.
- LP Director Interview. Each LP conducted an extensive interview with the LP director.
- Employer/Labor Organization Interviews. From each high school in the LP's CORE sample, evaluators were asked to identify and interview at least five employers who participated in career majors or academies, as well as all labor organizations working with students who participated in pre-apprenticeships or apprenticeships.
- Administrator Survey. Surveys were given to principals of all public K-12 schools. Separate surveys were developed for the elementary, middle, and high school levels. The target response rate for this survey was 70%. Response rates that were below 55% were not accepted for this evaluation. Over 1200 elementary schools, 300 junior high/middle schools, and 300 high schools reportedly completed this survey. Evaluators reported data to WestEd/MPR that were aggregated across all schools completing the survey.
- Senior Survey. This survey, which focused on students' participation in STC activities and their attitudes about school and plans for the future, was designed to be administered to a stratified random sample of 150 seniors from each CORE

school.[9] Before selecting the sample of students to complete this survey, evaluators were asked to have all seniors at the school classified by school counselors or STC coordinators as "high STC involvement" or "other," depending on their enrollment in a career pathway, academy, or Tech Prep program. Once classified, students were selected using a two-stage, stratified probability sample design with schools as the first-stage units and students within schools as the second-stage units (see Appendix A for more information about sample selection). The Senior Survey yielded responses from 14,412 seniors in 123 high schools. The target response rate for this survey was 80%. Response rates that were below 55% were not accepted for this evaluation.

- Follow-Up Survey. Respondents who completed the first Senior Survey were asked to complete a Follow-Up Survey, which focused on what students were doing in terms of schooling and employment 5 to 6 months after graduation. A total of 9,823 students completed the Follow-Up Survey. The target response rate for this survey was 75%. Response rates that were below 55% were not accepted for this evaluation.

PLUS CASE STUDIES

Unlike the CORE research, which relied upon common survey instruments and reporting formats designed by WestEd and MPR Associates, the PLUS analyses were under the direction of the local evaluators in the 5 LPs awarded PLUS funding. The PLUS analyses were designed to answer the research question: ***How has STC participation affected student preparation for postsecondary education and career entry?*** LPs were instructed that they could design their own specific research questions "…as long as their PLUS activities (1) focus exclusively on the relationship between STC implementation and student performance measures, and (2) use quantitative analyses to answer the targeted research question." [10] (See Appendix C for copies of PLUS case study reporting formats.) Examples of possible indicators that could be collected and analyzed as part of the PLUS evaluation included:

- Attendance rates
- Graduation rates
- Suspension/discipline rates
- Standardized test scores
- GPAs
- College admission rates
- Completion of A-G requirements
- Skill Certification completion

Each of the 5 LPs awarded PLUS funding used somewhat different statistical models and data to answer the PLUS research questions. This made summarizing the results of the PLUS research more difficult than it would have been had one model been employed and similar data obtained in each LP. In order to assist the State in reviewing what would otherwise be five idiosyncratic reports, WestEd and MPR Associates obtained the data files from each of the PLUS sites and attempted to compare the results of similar models where possible. In 3 of the 5 PLUS analyses, evaluators were able to link responses to the CORE Senior Survey and Follow-Up Survey to individual outcome measures (e.g., standardized test scores, cumulative grade point average (GPA), attendance, meeting the University of California A-G admissions requirement). Since the analytic models and data included in these models differed across LPs, WestEd and MPR Associates attempted to create similar measures of student characteristics and student outcomes using multivariate modeling in order to determine if there were any similarities in outcomes across sites after simultaneously controlling for differences in students' family and demographic characteristics.

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[9] In schools with fewer than 150 seniors, evaluators were instructed to administer the survey to all seniors.

[10] STC Case Study Request For Application (RFA), pg. 11.

CAN THE CORE OR PLUS RESULTS BE COMBINED TO REFLECT STC THROUGHOUT CALIFORNIA?

It is not possible to combine responses across LPs to represent "state totals." Neither the application process nor the award stage of this evaluation represented a random sample of LPs in California. Thus, it would be inappropriate to try to generalize from these data to the state as a whole. Participation in the CORE and PLUS analyses was based on a decision by LPs to apply for funding for the research and the State then determined the award of funding based on a technical review of proposals submitted in response to the RFA.

While the data from the CORE and PLUS analyses cannot be generalized to California as a whole, similar themes and findings from the individual LPs are likely to be suggestive of the experience of many of the existing LPs. The LPs selected for participation represent partnerships in different parts of California, both north and south. The 13 CORE LPs also reflect the diverse settings of STC partnerships in California: urban and rural, high or low minority student participation, and various socioeconomic backgrounds of students.

CHAPTER III
LP COMPOSITION, ORGANIZATIONAL STRUCTURE, AND OVERALL ROLES AND RESPONSIBILITIES IN STC IMPLEMENTATION

Both case study and non-case study LPs were asked to provide some basic background information about their partnerships, including details about their origin, composition (i.e., membership), organizational structure, and the primary roles and responsibilities they have assumed in coordinating and supporting STC implementation. The information provided by the LPs related to these topics is summarized in this chapter, and serves as an introduction to the LPs and their overall approaches to implementing STC.

INTRODUCTION TO CASE STUDY LPS

As mentioned in the introduction, the primary focus of this final report is on the 13 case study LPs selected for the statewide evaluation. Before discussing the many findings related to the STC efforts of these LPs, it is useful to know some basic information about them, including:

- the region in which each LP is located (Figure A shows the geographic location of case study LPs within California);
- the year in which each LP was established;
- the organization or agency that acts as the LP's fiscal agent;
- the number of K-12 school districts, elementary schools, junior high/middle schools, high schools, and postsecondary institutions that are part of each LP; and
- the approximate number of students that attend K-12 schools within each LP. (See Table 2 for details.)

As illustrated in Table 2 and Figure A, the 13 case study LPs vary significantly in terms of the regions they serve and their size. Case study LPs are located in 8 of the 12 geographic regions in the state. A few of the LPs serve predominantly small town/rural areas (e.g., North Coast STC Consortium, Sierra Regional STC Partnership) or large urban areas (e.g., San Francisco STC Partnership, UNITE-LA). Most serve some combination of urban, urban fringe, mid-size city, small town, and/or rural areas.

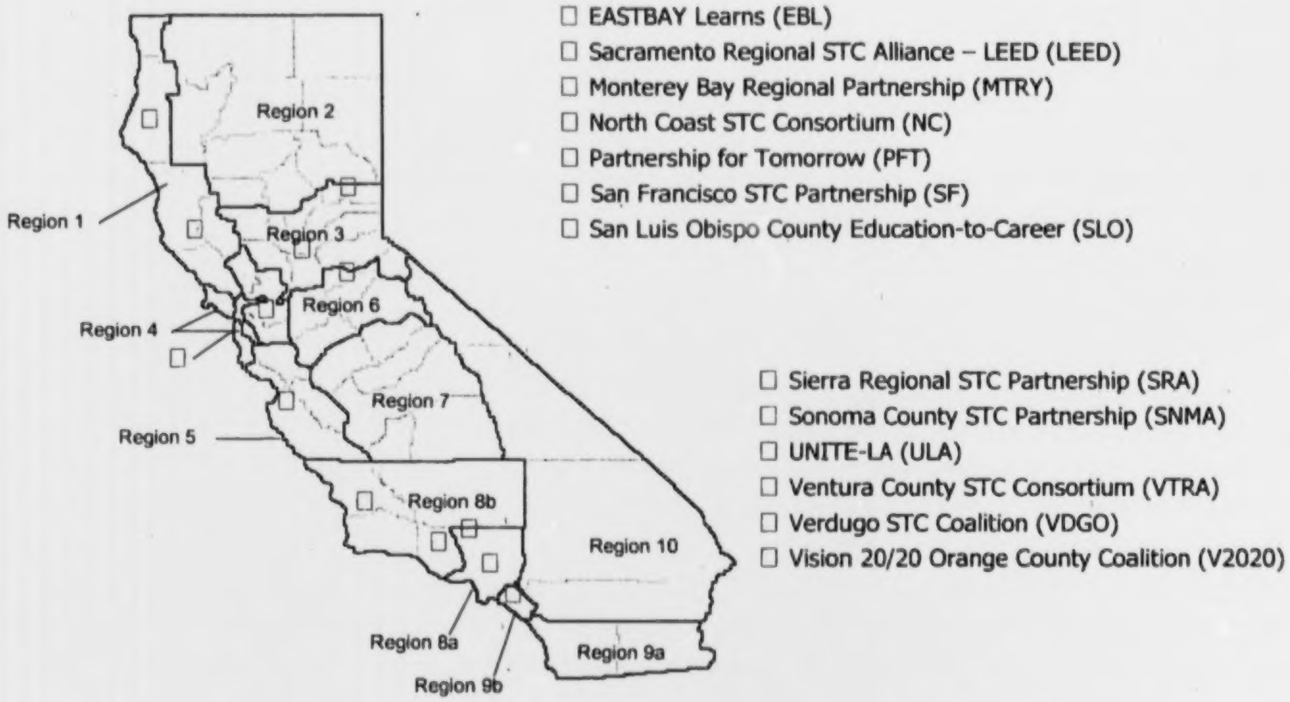
The four largest case study LPs (in terms of K-12 enrollment) include between 1 and 36 school districts and between 293 and 580 K-12 schools. The smaller LPs include between 1 and 33 school districts and between 29 and 186 K-12 schools. Most case study LPs work with between 1 and 4 postsecondary institutions; however, 3 work with 6 or more. Case study LPs have relationships with a greater number of community colleges than 4-year colleges and universities.

Table 2
Background information on 13 case study LPs
(Source = LP case study final reports)

	Region	Year Established	Fiscal Agent	Number of K-12 School Districts in LP	Number of Elementary Schools in LP	Number of Junior High/Middle Schools in LP	Number of High Schools in LP	Number of Postsecondary Institutions in LP	Number of K-12 Students in LP
EastBay Learns (EBL)	4	1995	Alameda County Office of Education	36	368	95	117	13	379,117
Sacramento Regional STC Alliance – LEED (LEED)	3	1991	LEED	9	185	46	62	4	375,000
Monterey Bay Regional Partnership (MTRY)[1]	5	1997-1998	Salinas Union High School District	13	0	0	29	3	25,000 High School Students
North Coast STC Consortium (NC)	1	1998	Humboldt County Office of Education	33	61	8	18	2	25,832
Partnership for Tomorrow (PFT)	6	1998	San Joaquin County Office of Education	11	121	21	36	3	165,872
San Francisco STC Partnership (SF)	4	1997	San Francisco Unified School District	1	79	17	15	3	59,979
San Luis Obispo Education-to-Career Connection (SLO)	8b	1999	San Luis Obispo County Office of Education	9	30	8	12	1	24,061
Sierra Regional STC Partnership (SRA)	3	1998	Placer County Office of Education	24	60	36	23	2	44,674
Sonoma County STC Partnership (SNMA)	1	mid-1990s	Sonoma County Office of Education	28	51	13	24	2	35,500
UNITE-LA (ULA)	8a	1995	Los Angeles Unified School District	1	423	71	51	9	721,000
Ventura County STC Consortium (VTRA)	8b	1998	Ventura County Superintendent of Schools Office	20	129	27	30	3	150,000
Verdugo STC Coalition (VDGO)	8a	1994	Glendale Unified School District	3	40	7	10	3	50,800
Vision 20/20 Orange County Coalition (V2020)	9b	1995-1996	Orange County Department of Education	27	328	77	60	6	500,000

[1] Monterey Bay LP did not include data in their case study related to elementary and junior high/middle schools.

Figure A
Geographical location of 13 case study LPs


Region 1
Region 2
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8a
Region 8b
Region 9a
Region 9b
Region 10
☐ EASTBAY Learns (EBL)
☐ Sacramento Regional STC Alliance – LEED (LEED)
☐ Monterey Bay Regional Partnership (MTRY)
☐ North Coast STC Consortium (NC)
☐ Partnership for Tomorrow (PFT)
☐ San Francisco STC Partnership (SF)
☐ San Luis Obispo County Education-to-Career (SLO)
☐ Sierra Regional STC Partnership (SRA)
☐ Sonoma County STC Partnership (SNMA)
☐ UNITE-LA (ULA)
☐ Ventura County STC Consortium (VTRA)
☐ Verdugo STC Coalition (VDGO)
☐ Vision 20/20 Orange County Coalition (V2020)

LP ORIGIN

Some LPs started their STC efforts with federal funds, while others were in existence in some form before these funds became available. Specifically, 6 of the 13 case study LPs were established prior to 1996, when California received the National School-to-Work Implementation Grant. A majority of these partnerships evolved from business-education consortia in the community. A few grew out of partnerships between high schools and community colleges involved in creating articulation agreements and coordinating Tech Prep and ROP activities.

Data from phone interviews with non-case study LP directors suggest that LPs created prior to the availability of STC funding consider themselves at an advantage over those LPs established with STC funds. Because these LPs have been in existence for awhile, they have had more time than newer LPs to plan and implement various collaborative efforts and to learn from their experiences. Also, STC funding has allowed them to expand and refine their efforts as opposed to starting from scratch. Finally, many of these LPs received financial support from a variety of partners and funding sources prior to receiving formal STC funding. Therefore, LPs that began their efforts prior to receiving STC funding report being confident that they can revert back to these sources if needed, and in fact, some have already started to do so.

LP COMPOSITION AND ORGANIZATIONAL STRUCTURE

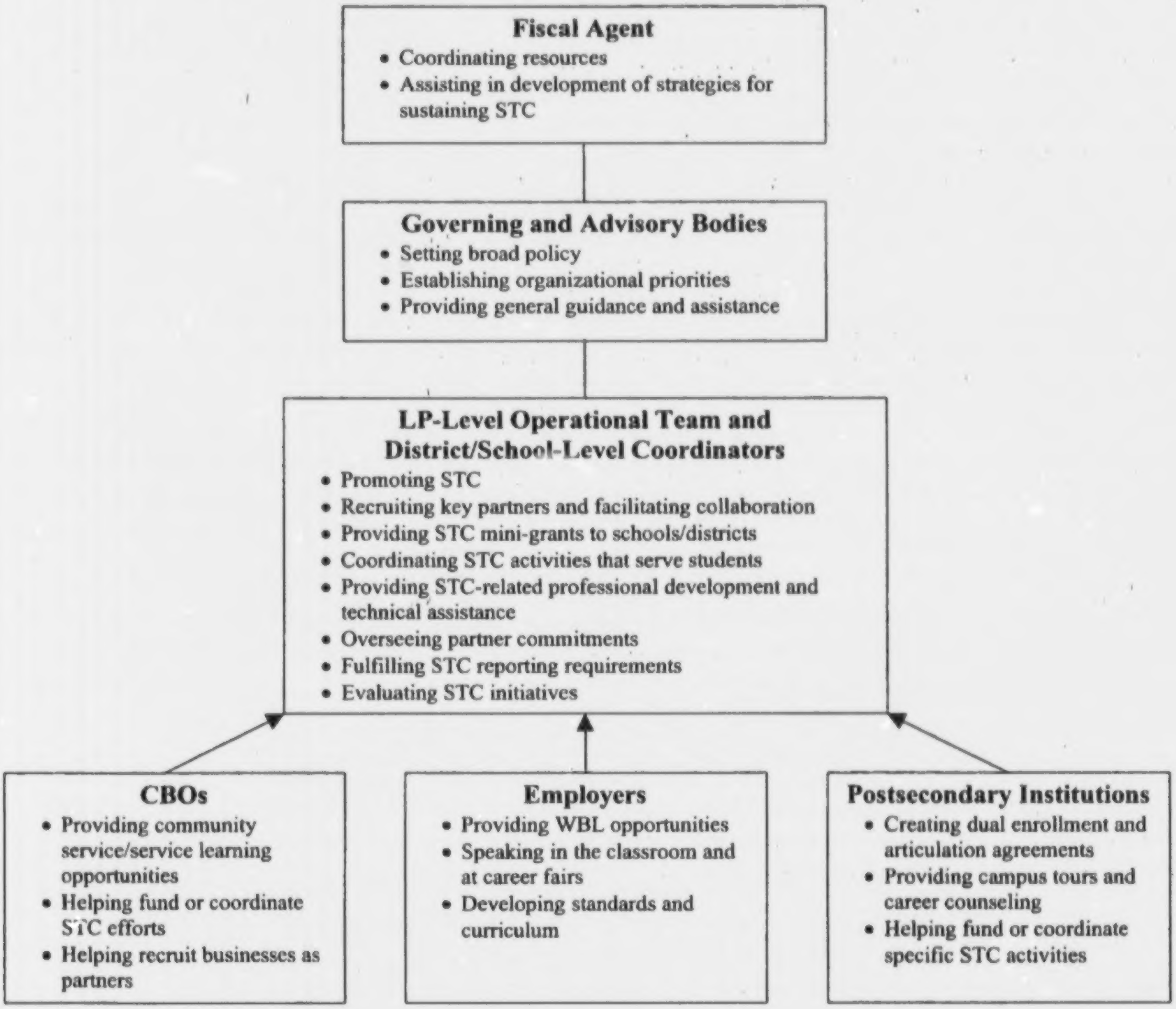
The STWOA recommends that LPs include representation from education institutions, training institutions, business and labor organizations, and, if possible, other entities such as workforce development boards, government agencies, and community-based organizations (CBOs). In California, LPs are required to involve several key partners, including employers, labor organizations, LEA representatives (elementary, middle, secondary), postsecondary representatives, local educators, students, and parent representatives. Inclusion of these partners is important for several reasons. Not only do they share an interest in helping students achieve high academic and occupational standards and prepare for productive careers, college, and citizenship, they are also in positions to play key roles in implementing STC, such as articulating the expectations and demands of the workplace and postsecondary education, providing work-based learning (WBL) opportunities, and helping to fund and/or coordinate various STC efforts.

For the most part, the composition of case study and non-case study LPs appears to be consistent with STWOA recommendations and California requirements. A majority of the LPs report representation from county offices of education, K-12 school districts and schools, postsecondary institutions, and employers on advisory and governing boards. In addition to these primary partners, some LPs report involvement in an advisory capacity from labor organizations, workforce investment agencies, local Chambers of Commerce, and other CBOs. Several non-case study LPs also report active participation by parents and members of local political offices.

While the specific roles that these key partners play in STC implementation vary from LP to LP, some generalizations can be made about the different ways in which they participate. *County offices of education or school districts* usually serve as fiscal agents for LPs and sometimes provide office space and administrative and operational support for LP staff. As fiscal agents, they are often extensively involved in developing strategies to sustain STC. *District offices* often monitor mini-grant implementation and sometimes designate STC coordinators at the district or school levels to facilitate STC efforts. *Administrators at the county, district and school levels, teachers, employers, and representatives from postsecondary institutions, CBOs, and labor organizations* often participate in LP governing and advisory bodies. In addition, *employers* provide WBL opportunities for students and teachers, speak in classrooms and at career fairs, and on occasion, help develop standards and curriculum. Some *CBOs* provide community service/service learning opportunities for students and in some areas help coordinate or fund specific STC efforts. For example, local chambers of commerce are helping several LPs recruit business partners and link them to schools. *Postsecondary institutions* are active in creating dual enrollment and articulation agreements with secondary schools, and in some LPs, provide campus tours and career counseling services for students. They sometimes coordinate and fund specific STC activities such as career fairs and occasionally assist high schools with career academy and major/pathway development. (More detailed information about involvement of employers, labor organizations, CBOs, and postsecondary institutions in STC will be presented in Chapter V in this report.)

All case study LPs and most non-case study LPs appear to have a tiered, hierarchical organizational structure (see Figure B). Generally speaking, the larger the LP, the more complex their organizational structure. While organizational structure varies somewhat from LP to LP, there are many structural similarities across LPs. For example, all LPs have a fiscal agent and many have some type of overarching governing board, one or more advisory/steering committees, an LP-level operational team (i.e., LP staff), and STC coordinators at the district and/or school levels. These common features of LPs' organizational structures are described below.

Figure B
Typical LP organizational structure, roles, and responsibilities



Fiscal Agent
- Coordinating resources
- Assisting in development of strategies for sustaining STC

Governing and Advisory Bodies
- Setting broad policy
- Establishing organizational priorities
- Providing general guidance and assistance

LP-Level Operational Team and District/School-Level Coordinators
- Promoting STC
- Recruiting key partners and facilitating collaboration
- Providing STC mini-grants to schools/districts
- Coordinating STC activities that serve students
- Providing STC-related professional development and technical assistance
- Overseeing partner commitments
- Fulfilling STC reporting requirements
- Evaluating STC initiatives

CBOs
- Providing community service/service learning opportunities
- Helping fund or coordinate STC efforts
- Helping recruit businesses as partners

Employers
- Providing WBL opportunities
- Speaking in the classroom and at career fairs
- Developing standards and curriculum

Postsecondary Institutions
- Creating dual enrollment and articulation agreements
- Providing campus tours and career counseling
- Helping fund or coordinate specific STC activities

Fiscal Agent

In most case study and non-case study LPs, an education entity serves as fiscal agent for the LP. For example, 8 of the 13 case study LPs have designated their county office of education as fiscal agent. An additional 4 case study LPs have given fiscal responsibility to a school district. In general, these education entities were selected as fiscal agents because of their willingness to assume the role and their ability to coordinate activities and resources across schools and/or districts. Only one case study LP, the Sacramento Regional STC Alliance, selected a regional economic development organization—LEED (Linking Education and Economic Development) —as fiscal agent. This organization was chosen as lead agency because of its success in creating business-education partnerships prior to passage of the STWOA. Similarly, only one non-case study LP interviewed, Workforce Silicon Valley, currently serves as its own lead agency. This LP, which evolved from the Silicon Valley Manufacturing Group, operates as a 501C-3 private non-profit organization. Two additional non-case study LPs report that they will form similar non-profit organizations once their STC funding ends. According to one LP director, obtaining non-profit status makes an LP eligible to apply for a variety of different kinds of grant monies.

Governing Body

Within most LPs, a governing body (e.g., Partnership Board, Leadership Council, Coordinating Council, Collaborative Assembly) is responsible for setting broad policy, establishing organizational priorities, and providing general guidance and assistance with oversight to the LP director and his or her staff. The governing bodies are usually comprised of individuals from key stakeholder groups (e.g., business executives, labor representatives, administrators and faculty from colleges and K-12 districts and schools, representatives from economic and workforce development organizations, parents, students). While some governing bodies meet monthly, many meet only 2 to 4 times each year. However, many LPs have an executive committee responsible for communicating more regularly with LP operational staff.

Advisory/Steering Committee

Many LPs have established one or more advisory/steering committees. In some LPs these committees are actually subcommittees of the governing body, while in others they are separate committees altogether. Usually, the advisory/steering committees are responsible for providing policy input to the governing body and/or helping to plan and implement various STC efforts. Some LPs have organized their committees around different key elements of STC (e.g., promoting STC, WBL, postsecondary articulation, standards and curriculum), while others have established committees related to different industry sectors or for different educational levels (e.g., elementary committee, junior high/middle school committee, high school committee) or regions within the LPs.

LP-Level Operational Team

In most LPs, the LP-level operational team is comprised of the LP director and his or her staff. This often includes an administrative assistant and in larger LPs one or more individuals responsible for forging connections with key partners and/or managing key aspects of STC implementation at the LP level. Overall, the LP-level operational team is responsible for overseeing implementation of STC across the LP. Data from telephone interviews with non-case study LP directors suggest that strong leadership at the LP level has been very important to the success of STC implementation. Without it, some LPs have struggled to get their STC efforts off the ground. More specifically, several current LP directors in non-case study LPs report that leadership turnover at the LP level (e.g., turnover of LP directors or fiscal agents) has made STC implementation very challenging. For LPs that experienced such turnover, lack of strong and consistent leadership has made it difficult to develop a central vision, establish a stable organizational structure, recruit and maintain relations with key partners, and generate momentum in implementing STC. The current director of one non-case study LP, for example, reports that it was not until the third year of the LP's grant that LP leadership finally stabilized and the LP was able to gain some momentum. Unfortunately, this LP now considers itself "behind the curve" in its efforts to build an STC system. (More specific information about the roles and responsibilities that LP-level teams assume in coordinating and implementing STC is presented later in this chapter.)

District/School-Level Coordinators

Finally, many LPs have designated STC coordinators at the district and/or school level. District coordinators are typically responsible for developing and implementing STC plans within their districts. Most LPs believe that the presence of STC coordinators at the district and/or school level is integral to implementing and sustaining STC efforts. School-site STC coordinators are responsible for sharing information about STC with teachers, encouraging teacher and student participation in STC activities, and overseeing implementation efforts at their school sites. In addition, they sometimes help recruit business partners willing to provide WBL opportunities and speak in classrooms or at career fairs. Both district and school-site coordinators serve as conduits between schools and LP staff.

CHANGES IN LP COMPOSITION AND ORGANIZATIONAL STRUCTURE

Data gathered from the case study LPs suggest that the composition and organizational structures of these LPs have remained fairly stable over time, perhaps because a majority of these LPs existed prior to STC funding and already had fairly well-established organizational structures and some collaborative working relationships in place. Despite relative stability, some changes in composition and structure have occurred. Similar changes have occurred in non-case study LPs. Specifically, some LPs have expanded the number and types of key partners that participate on governing bodies and advisory/steering committees and help implement and fund STC activities. In addition, some LPs have expanded or contracted their organizational structures. (See Box I for specific examples of changes in the composition and organizational structure of several LPs.)

Box I
Examples of changes in LP composition and organizational structure

- The steering committee of the San Francisco STC Partnership originally included key representatives from San Francisco Unified School District, City College of San Francisco, and the San Francisco Chamber of Commerce. The LP has expanded membership on this committee to include representatives from the Department of Children, Youth, and Families, the San Francisco Labor Council, and San Francisco State University.
- In 1998, East Bay Learns identified subregions within the partnership's geographic area and developed a subregional infrastructure to foster collaboration among key partners, facilitate coordination of employer outreach and WBL, and deliver STC technical assistance more effectively.
- Another LP decided to divide its governing body into subcommittees so that smaller groups of individuals could take more active roles in planning and carrying out specific STC-related tasks and activities.
- One case study LP admits that several task force committees that used to meet to plan and carry out specific STC activities no longer meet, primarily due to lack of organization and strong leadership

LP ROLES AND RESPONSIBILITIES

The specific roles and responsibilities that LPs have assumed in coordinating and supporting STC implementation vary from LP to LP. However, they tend to fall into 8 broad categories:

1) promoting STC;
2) recruiting key partners and facilitating collaboration among partners;
3) providing STC mini-grants to school districts and schools;
4) coordinating specific STC activities that serve students;
5) providing STC-related professional development and technical assistance;
6) overseeing partner commitments;
7) fulfilling STC reporting requirements; and
8) evaluating STC initiatives.

These responsibilities are described briefly below, and more detailed information about LPs' specific efforts to coordinate and support STC implementation is presented throughout this report. It is important to note that not all LPs assume responsibilities within all 8 categories. For example, not all LPs have opted to award mini-grants as a strategy for coordinating and supporting STC implementation.

Promoting STC

Most LPs have spent significant amounts of time and money promoting STC in an effort to generate public awareness about and build support for STC efforts. Through newsletters, Web sites, promotional mailers, newspaper articles, special events and presentations (e.g., stakeholder breakfasts), and other such communication vehicles, they have attempted to educate key stakeholder groups about what STC is and why it is valuable.

Recruiting Key Partners and Facilitating Collaboration Among Partners

Most LPs have taken a very active role in recruiting key partners (e.g., employers, postsecondary institutions, CBOs) to participate on LP boards and advisory committees and help implement various STC activities. And, many LPs have worked hard to facilitate communication and collaboration between key partners. For example, many LPs have made it a priority to recruit business partners, link them to schools, and nurture the development of productive working relationships between educators and employers. Sometimes LP staff recruit employers themselves and sometimes they find one or more partners (e.g., a local Chamber of Commerce, STC coordinators in districts and schools) to help connect employers to schools. Several LPs have created learning collaboratives (i.e., industry-specific networks of employers, educators, and representatives from CBOs that work together to plan and implement STC within schools) as a means of encouraging collaboration among key partners.

Most LPs see their role as liaison between partners as integral to the success of STC. In fact, several non-case study LP directors believe that many STC efforts would cease to exist without an intermediary agency (e.g., an LP) and/or key individuals at the district and school levels to continually promote the STC vision and build and support partnerships between key stakeholders.

Awarding STC Mini-Grants to School Districts and Schools

Many, but not all, LPs have distributed STC funds to school districts and schools (and sometimes employers) through mini-grants, thereby placing much of the responsibility for planning and implementing specific STC activities and programs in the hands of district and schools staff. LPs that have opted to award mini-grants generally have done so as a way to enable individual districts and/or schools to develop STC plans and implementation strategies that suit their particular needs and circumstances. Some LPs report that the mini-grant approach has resulted in innovative implementation of STC. For example, one LP used mini-grant funding to establish model regional career centers where students and adults can research careers during extended hours.

There appears to be wide variation in the processes LPs have used to award and administer STC mini-grants. While the mini-grant process has been informal in some LPs, it has been structured in others, requiring districts and schools to submit specific plans for implementing, monitoring, evaluating, and sustaining their proposed STC programs. Several non-case study LPs report modifying their mini-grant processes over time to address difficulties encountered. For example, one non-case study LP stopped offering mini-grants directly to schools. They now distribute mini-grants only to districts as a way to encourage development of districtwide STC systems rather than sporadic implementation of STC at limited school sites. Another non-case study LP was unable to award mini-grants to some schools during the first year of its state implementation grant due to problems with the mini-grant applications submitted by the schools. In subsequent years, the LP hired several consultants to help districts and schools prepare their STC mini-grant applications to help ensure that they would be eligible for the grants.

Some LPs chose not to distribute mini-grants to districts or schools because they were concerned that these grants would be seen as categorical funds to be used at districts' or schools' discretion. In general, these LPs have supported STC implementation through a combination of the other strategies discussed in this section, especially recruiting key partners and facilitating collaboration among them, building stakeholders' competence in STC implementation through professional development and technical assistance, and taking direct responsibility at the LP level for organizing and implementing specific STC activities and programs (e.g., job shadow events, internship programs).

Coordinating Specific STC Activities for Students

Some LPs, including both partnerships that do and those that do not award mini-grants, have assumed direct responsibility for coordinating selected STC activities that serve students within their partnerships. While the specific activities that these LPs organize and implement vary from one LP to another, examples include purchasing career assessment software and other career-related materials for use in career centers, organizing regional or school-based career fairs and guest speaker programs, organizing and sponsoring regional field trips to work sites, coordinating annual job shadow events (i.e., Groundhog Job Shadow Day), and establishing internship programs. The STC activities coordinated by the LP can serve as models for the types of activities that could later be organized and implemented by districts or schools.

Providing Professional Development and Technical Assistance

Most, if not all LPs, have offered professional development opportunities to key stakeholders (primarily teachers, administrators, guidance counselors, and employers) to deepen their understanding of STC and to equip them with the specific knowledge and skills needed to implement various STC activities and efforts. In addition, many LP directors and their operational staff have made themselves available to assist schools as needed with implementation of specific STC activities and programs. They have responded to requests for information, materials, and general guidance.

Oversight and Evaluation Activities

LPs monitor STC implementation efforts across their LPs to ensure that key partners are fulfilling their responsibilities. Many also assume primary responsibility for fulfilling the various STC reporting requirements associated with their state or federal STC implementation grants. They gather and document the required information and submit reports to the State.

Additionally, a number of LPs, including the 13 that conducted case studies, have either formally or informally evaluated their STC implementation efforts in an attempt to assess the impact of their work, identify best practices, and find ways to improve, refine, and sustain their efforts over time.

SUPPORT RECEIVED FROM STATE AGENCIES

To offer support to LPs as they worked to coordinate and implement STC, the State provided technical assistance to each LP through interagency teams assigned to each region of the state. During interviews with non-case study LPs, we asked LP directors to describe the types of support that they had received from each of the agencies (CCCCO, CDE, and EDD).[11] The support from these agencies that LPs found most helpful is described briefly below.

Overall, non-case study LPs credit the IAP with providing helpful technical support, auditing and evaluating LP programs, helping to expand some LPs' STC efforts, and offering valuable STC-related workshops, conferences, and seminars. One non-case study LP reports that the IAP's yearly visits and monthly phone calls have provided guidance and support on a regular basis.

It is important to note that while many non-case study LPs praised the IAP for the support they did provide, some also reported deficiencies in the support network, most notably the apparent lack of coordination among the three IAP agencies. In addition, some LPs believe that it would be helpful for these agencies to take an even more active role in promoting STC and encouraging participation by all stakeholders.

California Community Colleges Chancellor's Office (CCCCO)

Several non-case study LPs credit this state agency for providing leadership and technical assistance. In addition, several LPs reported that the CCCCO provided valuable information by keeping the LP apprised of postsecondary opportunities and grants.

California Department of Education (CDE)

Several non-case study LPs report that a variety of CDE-sponsored events (e.g., regional meetings and workshops) have helped STC implementers develop a better understanding of the State's vision of STC and have provided opportunities to build collegiality among implementers. Several non-case study LPs appreciate CDE's efforts to generate awareness about STC in the community and many consider the STC-related literature and information produced by the STC office useful to share with teachers. In addition, several non-case study LPs report that CDE staff have advised them on funding opportunities and provided general consultation and direction as needed (on request).

Employment Development Department (EDD)

Overall, non-case study LPs credit EDD staff for helping to set up evaluations, providing very helpful technical assistance and program support when needed (especially related to budget and data collection issues), serving on advisory committees, and suggesting strategies for sustainability.

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[11] Although LP directors were asked to comment about the support they received from these individual agencies, it is important to note that they recognized that the technical assistance they received was a concerted effort of the IAP.

CHAPTER IV
CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS

The first major research question that guided this evaluation was: ***What is the status of STC implementation in California?*** To address this question in part, we sought to determine the degree to which schools in case study LPs are offering various types of career development activities and programs. In this chapter of the report, we have divided our discussion of career development activities into three major sections:

- career awareness activities (most of which are school-based);
- WBL activities (e.g., internships, apprenticeships); and
- career-focused curricula (e.g., academies, career majors/pathways, Tech Prep).

In the section on career awareness, we discuss the prevalence of low-intensity STC activities such as career fairs, college visits, and field trips to businesses. These types of activities provide students with brief exposure to postsecondary education and employment options. Also discussed are students' opportunities for more in-depth experiences, such as curriculum units about an occupation or industry, work readiness classes, and regularly scheduled time at a school's career center. As will be discussed in greater detail in Chapter VI, participating in these low-intensity career awareness activities can have positive effects on students' confidence about their preparation for future careers and the value of high academic achievement.

Section two of this chapter discusses WBL, which is a form of career exploration. The overall goal of WBL is to provide students with the opportunity to go out into the workplace to explore various career options. WBL varies in form and intensity, ranging from brief visits to work sites—with very little connection to what students are learning in school—to paid youth apprenticeships that are the culmination of a coherent sequence of career-related coursework. WBL can serve to deepen students' understanding of the relevance of academic subjects and the expectations of the workplace.

In the third section of this chapter, we discuss career-focused curricula, such as career academies, career majors/pathways, and Tech Prep. These are the most intensive STC activities and programs, providing students with ongoing, concentrated STC experiences. Typically, students enrolled in these types of programs select an area of focus (e.g., engineering and industrial technology) and participate in a wide variety of STC experiences over the course of several years. Participation in more intense career-focused curriculum can have positive effects on students' attitudes toward school, their knowledge of career-related activities available to them in their schools, and their beliefs about how well school has prepared them for good jobs immediately after high school. (For a detailed discussion of these findings, see Chapter VI.)

Finally, we conclude this chapter with a discussion about the number of students participating in different career development activities; the extent to which career development activities and programs are reaching students of different socioeconomic and ethnic backgrounds; and the relationships between school characteristics and types of activities offered. Also included in this section is a discussion about the progression of activities across grade levels and barriers that inhibit the implementation of career development activities and programs.

CAREER AWARENESS ACTIVITIES

While career awareness activities such as career fairs, college visits, and field trips to businesses may be less intense than WBL or career-focused curricula, these activities play an integral role in helping students relate what they learn at school to the world of work. Moreover, these activities can be a crucial first step in helping students to set future goals. Data from the National Evaluation of School-to-Work Implementation indicate that the percentage of high schools throughout the country that are implementing career awareness activities is growing.[12] Consistent with national data, schools in case study LPs are building career awareness into the educational experiences of students at all grade levels.

The Prevalence of Career Awareness Activities

Elementary Schools

Data collected through the Administrator Survey suggest that similar career awareness activities were offered at many elementary schools within each case study LP during the 2000-2001 school year[13] (see Table 3 for details):

- All 12 LPs that collected data related to career awareness activities at the elementary school level[14] report that *outside speakers* who discuss careers were available in at least 50% of elementary schools within their partnerships, and that in 4 of these LPs, outside speakers visited at least 75% of schools.
- Nine of 12 LPs report that *field trips to worksites*, the second most common career awareness activity, were provided by more than 50% of elementary schools, and one LP reports that this activity was offered in at least 75% of schools.
- Far less common than outside speakers and field trips were *curriculum units* about one or more industries or occupations. Only 4 LPs report that at least 50% of elementary schools responding to the survey offered this activity, and no LPs report that this activity was offered at 75% of schools.
- *Career-related films* were rarely shown to students at the elementary level, with only one LP reporting that at least 50% of elementary schools offered this activity.
- All 12 LPs report that 26% or less of participating elementary schools offered *career fairs* to their students.

An examination of these patterns related to career awareness activities suggests that teachers at the elementary level may be capitalizing on relationships with individual employers to deliver career awareness information (e.g., by having them speak to students or by having students visit their worksites), rather than modifying their own instructional strategies (e.g., by creating and using curriculum units about careers).

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[12] WestEd and MPR Associates, White Paper, June 23, 2000, p. 22.

[13] It is important to note that not all schools within each LP responded to the Administrator Survey. Therefore, percentages in tables related to this survey are based on the schools that responded. For each LP, the number of schools responding (N) is provided.

[14] One case study LP (Monterey Bay Regional Partnership) did not provide data for elementary or junior high/middle schools, but did provide data for high schools.

Table 3
Percent of elementary schools in case study LPs that offered various career awareness activities in 2000-2001
(Source = Administrator Survey: II.1.a)

Activity	EBL	LEED	MRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N =	250	123	N/A	42	85	54	27	40	44	294	29	97	232
Outside speakers who discuss careers	58%	75%	N/A	83%	60%	78%	59%	68%	55%	65%	90%	69%	59%
Field trips to work sites	55%	53%	N/A	90%	56%	67%	56%	73%	45%	47%	66%	56%	34%
Curriculum units about one or more industries or occupations	43%	48%	N/A	71%	55%	44%	44%	23%	23%	66%	52%	47%	41%
Films related to careers	22%	26%	N/A	57%	27%	20%	26%	40%	18%	27%	38%	31%	25%
Career fairs	6%	7%	N/A	24%	6%	11%	26%	5%	7%	22%	10%	4%	8%

Junior High/Middle Schools

At the junior high/middle school level, Administrator Survey data suggest that various career awareness activities were widely implemented during the 2000-2001 school year in the LPs that participated in the case study research (see Table 4 for details). Outside speakers, career self-exploration, teacher- or counselor-facilitated career exploration, and curriculum units about one or more industries or occupations were more commonplace at this level than watching films about careers, field trips to work sites, or career fairs. Specifically,

- Similar to elementary schools, all 12 LPs report that at least 50% of junior high/middle schools within their partnerships had *outside speakers*. In 7 of these 12 LPs, outside speakers visited at least 75% of schools, and 2 LPs report that 100% of their schools offered this activity.
- The prevalence of *career self-exploration*, where students used materials such as databases, resource centers, and publications to learn about careers, varied extensively from LP to LP, and ranged from a low of 31% of schools to a high of 100% of schools offering this activity in 2000-2001. Overall, 10 of the 12 LPs report that at least 50% of participating schools provided this activity.
- *Teacher- or counselor-facilitated career exploration* shows a pattern similar to student self-exploration, ranging from a low of 31% of schools that offered the activity to a high of 88%. Overall, 8 LPs report that at least 50% of participating schools offered this type of experience to students.
- *Curriculum units* about one or more industries or occupations appear to be more common at the junior high/middle school level than at the elementary school level. Seven LPs report that at least 50% of junior high/middle schools offered this activity, and 2 LPs report that this activity was offered in at least 75% of junior high/middle schools.
- The opportunity for students to watch *films about careers* was more common in junior high/middle schools than in elementary schools. Five of the 12 LPs report that at least 50% of participating junior high/middle schools offered this activity.

- Whereas *field trips to work sites* were quite common at the elementary schools, this opportunity was relatively rare at the junior high/middle school level. Specifically, less than a third of LPs report that at least 50% of junior high/middle schools offered this experience, compared to three-quarters of the LPs at the elementary school level.
- *Career fairs* were also quite rare, though more prevalent than at the elementary school level. Only one LP reports that at least 50% of junior high/middle schools offered this activity.

Table 4
Percent of junior high/middle schools in case study LPs that offered various career awareness activities in 2000-2001
(Source = Administrator Survey: II.1.d)

Activity	EBL	LEED	MRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	68	36	N/A	7	15	16	8	12	28	53	5	23	53
Outside speakers who discuss careers	75%	61%	N/A	100%	73%	81%	88%	67%	68%	75%	100%	87%	68%
Career self-exploration by students	54%	64%	N/A	100%	53%	31%	63%	50%	54%	49%	100%	61%	51%
Teacher- or counselor-facilitated career exploration	35%	61%	N/A	86%	60%	31%	88%	42%	39%	53%	80%	78%	53%
Curriculum units about one or more industries or occupations	46%	36%	N/A	100%	53%	38%	75%	50%	43%	55%	60%	52%	43%
Field trips to work sites	35%	31%	N/A	86%	27%	50%	50%	42%	36%	55%	40%	39%	38%
Films related to career	37%	33%	N/A	71%	67%	31%	50%	17%	36%	38%	60%	61%	42%
Career fairs	21%	8%	N/A	43%	13%	25%	63%	8%	21%	40%	40%	22%	30%

High Schools

Data suggest that virtually all high schools responding to the Administrator Survey offered various career awareness activities in the 2000-2001 school year, as Table 5 shows. Not surprisingly, many high schools throughout most LPs report offering a wider variety of career awareness activities than elementary and junior high/middle schools. Moreover, when examining data related to activities that are offered at all three levels (e.g., field trips, outside speakers, career fairs), it is clear that these experiences are offered much more extensively at the high school level than in other grade spans.

- All 13 LPs report that at least 75% of high schools offered the following *career awareness activities:*
  - some career information addressed in the delivery of curriculum (e.g., curriculum units);
  - one-time events (e.g., field trips, speakers, films, and career fairs); and
  - career self-exploration by students.
- Twelve of the 13 LPs report that at least 75% of high schools offered *teacher- or counselor-facilitated career exploration.*

- Ten of the 13 LPs report that over 75% of responding high schools offered *individual career counseling.*
- Activities that LPs report with somewhat less frequency include the creation of individual student plans (specifying relevant high school and postsecondary courses that are linked to career options), separate work readiness classes, and regularly scheduled use of career centers for student research on careers.
  - All LPs report that the opportunity for students to create *individual plans* was available in at least 50% of high schools. Four of 13 LPs report that at least 75% of high schools provided students with this opportunity.
  - Ten LPs report that *work readiness classes* were available in at least 50% of high schools. However, only 3 LPs report that at least 75% of high schools offered this opportunity.
  - In 10 out of 13 LPs, *regularly scheduled use of career centers* was available in at least 50% of high schools. However, only 2 of the 13 LPs report that over 75% of participating high schools offered this opportunity to their students.

Table 5
Percent of high schools in case study LPs that offered various career awareness activities in 2000-2001
(Source = Administrator Survey: II.1.e and II.1.f)

Activity	EBL	LEED	MRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
Some career information influencing the delivery of curriculum	93%	93%	93%	100%	93%	82%	89%	100%	89%	100%	100%	96%	96%
One-time events (e.g., field trips, speakers, films, career fairs)	91%	88%	100%	100%	93%	91%	89%	90%	84%	97%	100%	100%	94%
Career self-exploration by students	91%	88%	87%	100%	89%	91%	89%	80%	79%	97%	89%	96%	90%
Teacher- or counselor-facilitated career exploration	91%	80%	93%	13%	93%	91%	78%	100%	89%	95%	100%	91%	90%
Work readiness classes	55%	46%	53%	87%	56%	64%	67%	60%	47%	82%	78%	65%	48%
Individual student plans that are linked to career options	59%	63%	73%	67%	52%	64%	78%	90%	74%	82%	78%	70%	64%
Regularly scheduled use of career center	62%	51%	67%	53%	48%	36%	56%	80%	32%	69%	78%	70%	62%
Individual career counseling	78%	78%	60%	100%	78%	73%	89%	90%	84%	90%	89%	87%	70%

WORK-BASED LEARNING

As was mentioned above, WBL activities vary in length and intensity. Some WBL activities involve one-day site visits to businesses, while others require participating in activities at a work-site over an extended period of time. In some instances, WBL activities are tied directly to what a student is learning in school, while in other cases, there is no link to the curriculum.

Box II below provides some examples of strategies that LPs have used to create WBL opportunities for students.

Box II
Examples of strategies for creating WBL opportunities for students

- As part of its STC efforts, one non-case study LP (Workforce Silicon Valley) developed the Bay Scholars Program, which focuses on WBL. The program includes two key components: an annual job shadow event and a summer internship program. The LP partners with Junior Achievement to organize Groundhog Job Shadow Day. Last year the LP had over 3000 students who job shadowed in 80 different companies. The LP also recruits companies willing to host student internships. In 1999 and 2000, the LP was able to offer 400 and 500 internships respectively. In 2001, they were only able to offer 375 internships, probably due to the downturn in the economy. The LP has developed an internship Web site (www.wsv.org/index_splash.html), which includes internship job postings, internship handbooks for educators, employers, and students, and other internship-related resources. Based on feedback from employers, the LP has made a special effort to prepare students for their internships by:
    - assessing students' readiness for internships through assessment programs;
    - providing job skill workshops and basic WBL opportunities to students prior to placing them in internships (e.g., resume writing, job interviewing, job shadowing);
    - working with schools to increase block scheduling so that students can participate in internships during their school day; and
    - working with schools to get students school credit for completing internships.

- Another non-case study LP (Merced) organizes five "industry days" each year. These are similar to career days, but each focuses on a particular industry. Prior to each industry day, schools identify students interested in careers within the industry. On the industry day, the selected students go to workshops where they hear various speakers who work within the industry. They attend a luncheon where they have an opportunity to talk with professionals in the industry. Then they visit a work site where they get to learn more about the specific careers within the industry.

- Because funds are no longer available to transport students to job shadow locations, one LP in the Los Angeles area (East San Gabriel) is now connecting students and employers via e-mail for virtual job shadow experiences. The employers involved in the virtual job shadow experiences often become mentors to the students.

Data from case studies indicate that **WBL is widely available to students within many case study LP high schools**. However, consistent with national data,[15] survey results indicate that **less intense WBL experiences occur with greater frequency than more intense WBL experiences**.

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[15] WestEd and MPR Associates, White Paper, June 23, 2000, p. 31.

Moreover, WBL activities that were specifically connected to career majors/pathways were offered less frequently than WBL activities that were not linked to career majors/pathways.

Availability of WBL Opportunities Not Connected to Career Majors/Pathways

- As Table 6 shows, *community service/service learning* is quite prevalent across case study LPs. All 13 LPs report that at least 50% of high schools responding to the Administrator Survey offered this experience to students during the 2000-2001 school year, and 7 LPs report that this opportunity was available at over 75% of their schools.
- All 13 LPs report that at least 50% of high schools responding to the Administrator Survey offered *work site visits* and *job shadowing*, and 6 of 13 LPs report that at least 75% of high schools offered these opportunities.
- In comparison, only 5 of 13 LPs report that at least 50% of their high schools offered *workplace mentoring*.

Availability of WBL Opportunities Connected to Career Majors/Pathways

- Only 2 LPs indicate that at least 50% of high schools responding to the Administrator Survey offered *unpaid summer internships linked to student's choice of career major/pathway*, and 9 report that this experience was offered at fewer than 25% of high schools.
- Eight LPs report that students in at least 50% of schools had the opportunity to work in unpaid jobs related to their choice of career major/pathway.
- Not surprisingly, paid jobs related to career majors/pathways were far less common than unpaid jobs related to career majors/pathways. Only 3 LPs report that students in at least 50% of schools had this opportunity during the school year, and even fewer (2 LPs) offered this opportunity during the summer.

Table 6
Percent of high schools in case study LPs that offered various work-based learning (WBL) activities in 2000-2001
(Source = Administrator Survey: V.I.a)

Activity	EBL	LEED	MRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
Work site visits	54%	56%	87%	60%	59%	73%	78%	90%	79%	82%	67%	78%	64%
Job shadowing	57%	56%	87%	73%	59%	82%	78%	80%	74%	72%	78%	87%	56%
Community service/service learning	78%	51%	87%	80%	59%	91%	56%	90%	63%	87%	100%	74%	62%
Workplace mentoring	49%	49%	40%	53%	37%	91%	22%	70%	58%	59%	44%	39%	38%
WBL Activities Connected to Career Majors/Pathways													
Unpaid school year jobs	46%	51%	47%	53%	52%	73%	44%	60%	47%	56%	67%	61%	36%
Paid school year jobs	35%	32%	47%	47%	26%	27%	44%	60%	53%	64%	33%	48%	24%
Paid summer jobs	29%	34%	27%	33%	19%	73%	22%	60%	47%	54%	44%	26%	22%
Unpaid summer internships	9%	24%	7%	13%	4%	36%	11%	50%	5%	46%	67%	22%	16%

Data from the Senior Survey show similar results (i.e., that less intense WBL experiences occur with greater frequency than more intense WBL experiences). As Table 8 indicates,

- Across all LPs, at least 25% of students responding to the survey (n=14,412) participated in *job shadowing*.
- In comparison, the percentage of students participating in *internships* was lower. Only 5 LPs report that at least 25% of seniors surveyed participated in internships not related to coursework, and no LPs report that at least 25% of seniors surveyed participated in internships that were related to coursework.
- The percentage of seniors participating in *apprenticeships* was lower yet, with no LPs reporting that at least 25% of the seniors had engaged in this activity.

CAREER-FOCUSED CURRICULA

Career-focused curricula, which include career academies, career majors/pathways, and Tech Prep, are typically quite intensive and offer students concentrated, ongoing STC activities and experiences. The next section of this report will discuss the prevalence of career-focused curricula in case study LPs.

Career Academies

The major goal of a career academy (which is one form of career-focused curricula), is to provide a learning environment that institutionalizes comprehensive STC activities and exposes students to career-related coursework and work experience—without reducing exposure to academic core courses.[16] In general, career academies typically include three key elements:[17]

- a small learning community that allows for a "school within a school;"
- college preparatory curriculum with a career theme; and
- partnerships with employers, community, and postsecondary institutions.

Academies were originally designed for "at-risk" students and students in the "academic middle" who lacked motivation and involvement in school. A basic premise underlying the creation of academy programs is that encouraging students to have a career focus will ultimately enhance engagement in learning. California Partnership Academies, in particular, target an at-risk population. Currently there are 260 California Partnership Academies, many of which are in the case study LPs.

Despite the belief in the value of academies for at-risk students, the academy concept has broadened in recent years. Now, academies attract a wide range of students, many of whom are high academic performers who are motivated to attend postsecondary institutions. Proponents of academies agree that these educational programs can serve many different groups of students.

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[16] Kemple, 2000.

[17] Stern, Dayton, and Raby, 1998.

Career Majors/Pathways

Career majors/pathways represent a strategy for organizing the high school curriculum around broad career areas or occupational clusters. California's vision for a reformed secondary education (as described in various documents, such as the California School-to-Career Plan) is that all students have the choice of a range of career majors/pathways that facilitate the transition from high school to career-entry positions or to postsecondary education. The hope is that career majors/pathways will eliminate tracking because students will be allowed easy movement and choice among career majors/pathways and will be prepared for a broad range of possible higher education and career goals.

In many ways, the emerging popularity of career majors/pathways in California is an outgrowth of earlier education reforms that attempt to make education more relevant for students, such as the aforementioned California Partnership Academies. In California, career majors/pathways take many shapes and forms. However, for the purposes of this evaluation case study LPs were asked to use the following definition:

> A *career major/pathway* is defined as a sequence of courses (program of study) that students follow, including their selection of academic and, in some cases, occupational or technical courses. The choice of a career major/pathway may also influence students' involvement in workplace activities. Just choosing a vocational, occupational, or technical course is not equivalent to choosing a career major pathway.

Tech Prep

Tech Prep is an important STC strategy focused on helping students make the connection between school and employment. Tech Prep is the name given to programs that offer at least four years of sequential course work at the secondary and postsecondary levels to prepare students for technical careers. Programs typically begin in eleventh grade and result in an award of an associate's degree or certificate after two years of postsecondary training. Other Tech Prep combinations are also available, depending on local consortium arrangements. Tech Prep is designed to build student competency in academic subjects and to provide broad technical preparation in a career area. Course work integrates academic and career-technical subject matter and may provide opportunities for dual enrollment in academic and career-technical courses at secondary and postsecondary institutions.

The Prevalence of Career Academies and Career Majors/Pathways in Case Study LPs

As part of the Administrator Survey, LPs were asked to collect information about the prevalence of academies, California Partnership Academies, and career majors/pathways in high schools within their region. Data indicate the following (see Table 7 below for details):

- Twelve LPs report having *career academies* in their region. The number of high schools offering career academies varies dramatically across LPs and ranges from a low of 1 (in 3 LPs) to a high of 32 (in 1 LP). While 9 LPs have fewer than 10 high schools with academies, 4 LPs report that academies are available in at least 16 high schools in their region.

- Often, high schools have more than one academy. Data indicate that, while the number of LP high schools offering academies ranges from 0 to 32 across LPs, the number of different academies available at these schools varies from 1 to 81.
- Eleven case study LPs report having *California Partnership Academies* available in high schools in their regions. The total number of California Partnership Academies ranges from a low of 1 (in 2 LPs) to a high of 32. While 9 LPs have fewer than 10 high schools with California Partnership Academies, 4 LPs report having at least 19 of these programs.
- Similar to data available about academies, the number of *career majors/pathways* available in LP high schools varies across LPs, and ranges from a low of 4 in 2 LPs to a high of 32 in one LP. Eight LPs have fewer than 10 high schools with career majors/pathways, while 5 LPs report that career majors/pathways are available in at least 11 high schools.

Overall, LPs report that career majors/pathways are available in slightly more high schools than career academies, and many of the academies that are available are California Partnership Academies. Moreover, data indicate that these intensive programs are only available in about one-third of high schools completing the Administrator Survey.

Table 7
Numbers of career academies[18] and career majors/pathways in case study LPs[19]
(Source = LP case study final reports)

	Number of LP High Schools Offering Academies	Total Number of Career Academies in LP	Number of CA Partnership Academies	Number of LP High Schools Offering Career Majors/pathways
East Bay Learns	21	31	31	17
LEED	18	32	27	6
Monterey Bay	6	11	3	11
North Coast	0	0	0	7
Partnership For Tomorrow	5	12	2	4
San Francisco	7	11	2	7
San Luis Obispo	1	1	0	5
Sierra Regional	1	2	1	4
Sonoma	1	1	1	10
UNITE-LA	32	81	32	32
Ventura	8	13	6	17
Verdugo	5	9	3	5
Vision 2020	16	31	19	7

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[18] *Career academies* are defined as "schools-within-a-school" in which groups of students take several classes together each year focused around a career theme with the same group of teachers in an effort to enhance the real-world relevance of instruction while preserving academic rigor. California Partnership Academies are *career academies* funded by state grants and have specific funding and student selection requirements.

[19] While these data may be informative, a caveat is necessary. Several LP evaluators reported that their data are suspect due to different definitions used by school administrators to identify academies and/or career majors/pathways.

THE NUMBER OF STUDENTS PARTICIPATING IN CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS

While many schools throughout each LP appear to offer a substantial number of career development activities, it is important to note that offering such activities does not necessarily mean that a high proportion of students are engaging in these activities. **Although administrators completing the survey were asked to provide the numbers of students participating in each career development activity, LP evaluators consistently reported in their case studies that these numbers were highly suspect due to the fact that few schools have accurate tracking systems that enable administrators to provide specific information about participation rates.** This lack of a tracking system makes it difficult to determine to what extent career development activities and programs are reaching *all* students, an important goal of STC in California.

However, data from the Senior Survey, representing 14,412 students across the state, show some consistent trends related to the frequency of student participation in various career development activities and programs (see Table 8). These trends are summarized below.

- **Substantial numbers of seniors participated in certain career awareness activities** such as interest inventories, career fairs, and/or listening to outside speakers (50-80%).
- **Fewer seniors engaged in job shadowing** than in the activities mentioned above, with participation rates ranging from 25% to 42%.
- In most LPs, **even fewer students participated in internships either related or unrelated to their schoolwork, or in apprenticeships**, with participation rates ranging from 5% to 41%. Participation in apprenticeships was clearly far lower than participation in either kind of internship.
- Overall, 11 out of 13 LPs report that **fewer than one-third of seniors surveyed participated in either a career academy, career major/pathway, or Tech Prep program**.
- Seniors were more involved in career majors/pathways than in career academies or Tech Prep.
    - Seven of the 13 LPs report that at least 25% of students participated in *career majors/pathways*. One LP reports a participation rate of 44%.
    - In comparison, LPs report that far fewer students participated in *career academies*, with participation rates ranging from 2% to 17% across LPs.
    - Participation rates for *Tech Prep* programs were similar to academies, with participation rates of between 3% and 18%.

Table 8
Percent of 2000-2001 California high school seniors in case study LPs who participated in career development activities
(Source = Senior Survey)

		Career Awareness Activities			Work-Based Learning			Career-Focused Curricula[2]		
	Number of Students[1]	Job Shadowing	Interest Inventory	Career fair/ speaker	Internships not related to courses	Internships related to courses	Apprenticeship	Career academy	Career major/ pathway	Tech Prep
East Bay Learns	1,849	33%	60%	54%	18%	18%	8%	14%	23%	10%
LEED	1,404	27%	71%	69%	22%	18%	11%	17%	28%	12%
Monterey	1,111	42%	71%	71%	28%	24%	15%	17%	34%	11%
North Coast	194	28%	67%	80%	15%	14%	5%	3%	17%	8%
Partnership for Tomorrow	1,050	37%	67%	76%	28%	24%	8%	11%	32%	18%
San Francisco	625	35%	50%	60%	41%	22%	18%	14%	22%	10%
San Luis Obispo	543	36%	76%	61%	22%	19%	8%	3%	44%	14%
Sierra	801	40%	64%	76%	22%	15%	9%	2%	17%	3%
Sonoma	887	28%	75%	79%	17%	12%	9%	3%	17%	5%
UNITE-LA	2,080	31%	60%	54%	32%	24%	19%	12%	25%	11%
Ventura	1,144	25%	79%	61%	22%	23%	11%	4%	27%	8%
Verdugo	743	27%	56%	59%	25%	21%	11%	11%	23%	10%
Vision 2020	1,981	28%	76%	66%	24%	22%	12%	14%	32%	13%

[1] Number of student counts are unweighted; percentages are based on weighted estimates. (See Appendix D.)
[2] Participation reported by students in Senior Survey.

THE RELATIONSHIP BETWEEN STUDENT AND SCHOOL CHARACTERISTICS AND LEVEL OF PARTICIPATION IN CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS

Unlike career-technical education,[20] which for many years was considered as an option almost exclusively for non-college bound students, STC is meant to serve all students, regardless of their postsecondary plans or their racial, ethnic, and socioeconomic backgrounds. To determine if there were systematic, consistent relationships between student and school characteristics and the level of participation in career development activities and programs, LPs were asked to disaggregate Administrator Survey data by school characteristics such as urbanicity, percent minority, and percent free/reduced lunch and by student characteristics such as race, gender, and parent education level. In addition, in interviews at CORE high schools, LP evaluators sought to determine if schools are targeting certain types of students for STC activities.

Overall, an analysis of Administrator Survey and interview data show that **few consistent discernible or statistically significant patterns exist when examining the relationship between school or student characteristics and the prevalence of career development**

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[20] Formerly referred to as vocational education.

activities and programs.[21] Any differences seemed to be unique to partnerships and could not be applied to all case study LPs. **This suggests that career development activities and programs are reaching a wide range of students**—an important finding since California STC seeks to offer access to *all* students.

While consistent trends across all LPs were not apparent, a number of observations related to school and student characteristics were reported. These observations are discussed below.

School Characteristics and Levels of Participation

Socioeconomic Characteristics

- A few LPs, especially those in highly populated urban areas such as Los Angeles, San Francisco, and Oakland, noted that junior high/middle schools with higher proportions of low-income and minority students offered more career awareness activities than schools with other socioeconomic characteristics. While this finding was not consistent across all LPs, it is perhaps an indication of the types of schools to which large urban LPs direct resources and funding.
- In a small number of LPs, a larger proportion of high schools with higher percentages of minority and low-income students offered activities such as work-site visits or job shadows.
- In some LPs, those high schools serving low-income students have the highest percentages of career academies. California Partnership Academies, in particular, target an at-risk population.
- One fairly large case study LP (East Bay Learns) reported that, in their region, career academies are highly concentrated in low-income high schools. The lowest income high schools were the most likely to have "wall-to-wall" academy programs (where all students enroll).
- Interestingly, more affluent high schools appear to have the highest percentage of career majors/pathways. East Bay Learns, for example, noted that higher income high schools in their region were more likely to have only career majors/pathways, and no academies.

Urbanicity

- LPs with high schools in rural areas reported that WBL opportunities for students are limited. For example, in the North Coast LP, only 4% of seniors in rural high schools had participated in job shadowing, while 42% of seniors from small-town high schools reported participating in this activity. However, given the relatively small sample size of rural schools, these observations cannot be generalized across sites.

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[19] Tests of statistical significance are conducted to determine the likelihood that a relationship between variables (e.g., gender and participation in career development activities) can be attributed to random chance or to a cause or reason.

"High Implementation" vs. "Other"

- At the high school level, a few LPs found that larger proportions of "high implementation" high schools offered career awareness activities when compared to "other" schools (see Appendix C for a discussion of how schools were classified). For example, East Bay Learns reported that 89% of "high implementation" schools help students develop individual plans specifying relevant high school and postsecondary courses, compared to 55% of "other" schools.

Student Characteristics and Level of Participation

Academic Achievement

- Interview data suggest that **most CORE high schools are striving to make career development activities available to all students**. However, while few LPs appear to explicitly target certain groups of students for these activities, LPs report that this practice does occasionally occur. Five case study LPs, for example, indicated that STC strategies were often used to engage students who had become disinterested in school.
- Moreover, interview data indicate that **STC continues to be associated with career-technical education at some high schools**. Generally, teachers have not fully embraced STC at these schools, viewing it as detrimental to academic programs. Consequently, higher achieving students at these schools were not as likely to be encouraged to participate in STC.
- Interestingly, Senior Survey data suggest that in some LPs, **12th grade students who reported grades of C or better—not the lowest-achieving students—were more likely to participate in career development activities and programs**. In a few LPs, students reporting B and C grades were more likely to participate than both higher- and lower-achieving students. Some LPs said that there are accountability issues related to some career development programs that make it more likely that STC programs will involve only the most motivated students. For example, one LP reported that since continued funding is performance-based, there may be disincentives for California Partnership Academies to serve lower-achieving students. One LP noted that low-achieving students are sometimes prevented from taking STC courses because they are required to take remedial math or language, and there is no room left in their schedules for STC-related courses. Some educators and supporters of STC consider this rather ironic, since many believe that STC courses may actually motivate students, possibly keeping them in school, while an increased focus on remedial classes may actually increase the likelihood that students will drop out.

"High Intensity" vs. "Other" Students

- In at least 4 of 13 LPs, "high intensity" students were more likely to participate in career-related activities such as career assessments and job shadowing than "other" students (see Appendix C for a discussion of how students were classified).

Parent Education

- In some cases, **the level of parental education correlated with the participation levels of students in some career development activities**. About half of the LPs in this study report that lower parental education levels may be associated with higher student participation rates in WBL. For the most part, students whose parents attained nothing higher than a high school diploma were more likely to participate in intense WBL experiences such as internships related to school.
- In addition, several LPs report that students whose parents have attained fewer education degrees are more likely than students with parents who have attained higher-level education degrees to be enrolled in career majors/pathways and career academies.
- One LP reports that there was nearly a direct linear association between parents' education levels and academy enrollment, with academy enrollment decreasing as educational attainment among parents increased. This LP reports that this correlation is consistent with the fact that most of the academies in this LP are housed in the poorest schools.[22]

Gender

- In 9 of 13 LPs, females were consistently more likely than males to participate in various career development activities and programs.[23] Five of these LPs report that these differences in participation rates were statistically significant. Only one LP reports that males were significantly more likely than females to have participated in career development activities and programs.
- A few LPs, particularly those located in urban areas (San Francisco, Sacramento, and Oakland), report that females were more likely than males to participate in internships, both related and non-related to school.
- Several LPs report that there are more males than females participating in career majors/pathways and career academies.

Race/Ethnicity

- In 8 of 13 LPs, African Americans, Asian/Pacific Islander, and Hispanic Latino students were consistently more likely than other race/ethnicity groups to participate in various career development activities and programs.[24] Of these 8 LPs, 3 found that these differences were statistically significant. Two of these 3 LPs report that Hispanic/Latino were significantly more likely to participate in various career development activities and programs. One LP reports that Asian/Pacific Islander students were significantly more likely to participate in various career development activities and programs.

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[22] As measured by CalWORKS enrollment.

[23] The way data were reported in case study reports by LPs was not consistent. However, trends were apparent.

[24] Ibid.

- Moreover, in at least 8 case study LPs, minority students (most often Hispanic/Latino) were more likely to participate in WBL activities than White students. In addition, LPs reported that minority students were participating in intensive opportunities such as internships related to school at greater levels than White students. However, these differences were not statistically significant.

THE PROGRESSION OF CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS ACROSS GRADE LEVELS

Underlying STC initiatives is the premise that students will experience a smooth progression of career development activities and programs as they move through their education. While large numbers of schools report offering career development activities and programs, **there is little evidence that coordination occurs across K-12 school levels. Data indicate, however, that there is a high degree of coordination between high schools and postsecondary institutions in many LPs**. (See Table 9.) Overall, results of this study indicate that greater efforts need to be undertaken to enhance communication and coordination between the different educational levels.

- Often due to lack of funding or resources, many LPs have focused most of their time and effort at the high school level.
- High schools reported overwhelmingly that they coordinate activities with postsecondary institutions more than with feeder junior high/middle schools. Twelve of the 13 LPs report that over 50% of participating high schools coordinate career awareness activities with postsecondary institutions. In comparison, only 3 LPs report that 50% or more of schools coordinate activities with junior high/middle schools.
- While coordination across K-12 school levels is infrequent, there is an indication that some high schools strive to create a continuum of experiences for students in grades 9-12. Data collected from the Administrator Survey suggest that some schools attempt to create a comprehensive STC plan for students. As was discussed earlier in this chapter, all LPs report that the opportunity for students to create individual plans specifying relevant high school and postsecondary courses that are linked to career options was available in at least 50% of high schools.

Table 9
Percent of high schools in case study LPs that communicated with junior high/middle schools and postsecondary institutions to coordinate/connect career development activities in 2000-2001
(Source = Administrator Survey: II.1.e)

Percent of high schools that coordinate career development activities with:	**EBL**	**LEED**	**MTRY**	**NC**	**PFT**	**SF**	**SLO**	**SNMA**	**SRA**	**ULA**	**VDGO**	**VTRA**	**V2020**
N=	**69**	**41**	**15**	**15**	**27**	**11**	**9**	**10**	**19**	**39**	**9**	**23**	**50**
Junior high/middle schools	28%	22%	33%	47%	41%	9%	67%	40%	26%	38%	78%	57%	40%
Postsecondary institutions	71%	51%	20%	87%	70%	82%	78%	90%	68%	79%	100%	87%	80%

CHALLENGES ASSOCIATED WITH IMPLEMENTING CAREER DEVELOPMENT ACTIVITIES AND PROGRAMS

Clearly, a wide variety of career development activities and programs are available in schools of all levels throughout case study LP regions. However, certain barriers exist that have hindered the ability of schools to implement these activities and programs and to establish sustainable programs. Some school staff have been able to overcome some of these barriers by working closely with other programs at the school, such as ROP, thereby leveraging existing resources and infrastructure.

- School staff frequently reported that *the recent focus on accountability and standards* has left resources and personnel stretched. With new accountability and testing requirements, counselors and teachers feel they have little time to plan and coordinate STC activities.
- In other schools, staff cited *high administrator and teacher turnover rates* as especially problematic. This turnover can result in having to train large numbers of incoming teachers about STC, or having to persuade new administrators to invest scarce time and resources in implementing STC activities and programs. Clearly, extensive turnover can hinder STC implementation.
- Some schools' staff noted that *a lack of resources* inhibited their ability to fully implement career development activities or programs. Some LPs reported that planning activities was difficult because of a lack of funding or no presence of an on-site STC coordinator. This problem seemed less pronounced in schools with strong ROP or career academy programs, since these programs often have additional resources and support available, such as employer labor contacts, professional development opportunities for teachers, and technical assistance. Data collected through interviews with non-case study LPs indicate that schools are capitalizing on existing ROP programs to increase WBL opportunities for students.

CHAPTER V
STRUCTURAL AND PROGRAMMATIC ASPECTS OF STC IMPLEMENTATION

While the previous chapter focused on results related to student participation in STC activities and learning opportunities, this chapter describes findings with respect to structural and programmatic aspects of STC. These include:

- Attitudes and Professional Development of Teachers and Principals
- Curriculum Integration Strategies
- New Graduation Requirements, Standards, and Opportunities for Certification
- Connections with Business, Labor Organizations, CBOs, and Postsecondary Institutions

ATTITUDES AND PROFESSIONAL DEVELOPMENT OF TEACHERS AND PRINCIPALS

For STC or any education reform, teachers are the gateway to change. Simply stated, if they are not convinced of the value of a reform effort, it will not succeed. As such, professional development is fundamental to STC implementation, helping teachers understand the vision and educational significance of this reform and giving them the skills and support necessary to implement change.

Administrators and teachers were interviewed at each of the CORE high schools within each case study LP. The purpose of the interviews was to better understand teachers' attitudes towards and understanding of STC, including:

- if they generally believe that expanding career awareness and development activities will enhance students' academic preparation; and
- how teachers are responding to various aspects of STC.

In addition, data about professional development were collected through interviews at CORE schools and through the Administrator Survey. Below we describe the major findings concerning teacher and administrator knowledge and attitudes towards STC and opportunities for professional development from LP case studies.

Support for STC Among Teachers is Not Uniform

A clear difference between the attitudes of academic and career-technical education teachers was evident in data collected through interviews in case study high schools. **A majority of LPs reported that *academic* staff view STC as an add-on to curriculum, while *career-technical* education teachers more typically view STC as an integral part of education.** Some case study LPs noted differences in levels of teacher support for STC with respect to new versus veteran teachers. Specifically, 4 LPs (Vision 2020, Ventura, Monterey Bay, and San Luis Obispo) reported that new teachers were more receptive to STC than those who have been teaching for longer periods of time. However, there were no consistent findings across LPs of differences attributable to school characteristics in regards to teacher understanding of STC, teacher attitude towards STC, and professional development opportunities provided. That is, school characteristics do not appear to affect teacher attitudes or types of professional development offered.

Teachers Often Lack Detailed Knowledge About STC Implementation

On the elementary and junior high/middle school Administrator Survey, respondents were asked if at least half of the teachers on their staff have a "good understanding of the purpose of STC." **While teacher understanding of the purposes of STC is clearly essential to STC implementation, data indicate that teacher understanding is limited** at these grade levels (see Figures C and D).

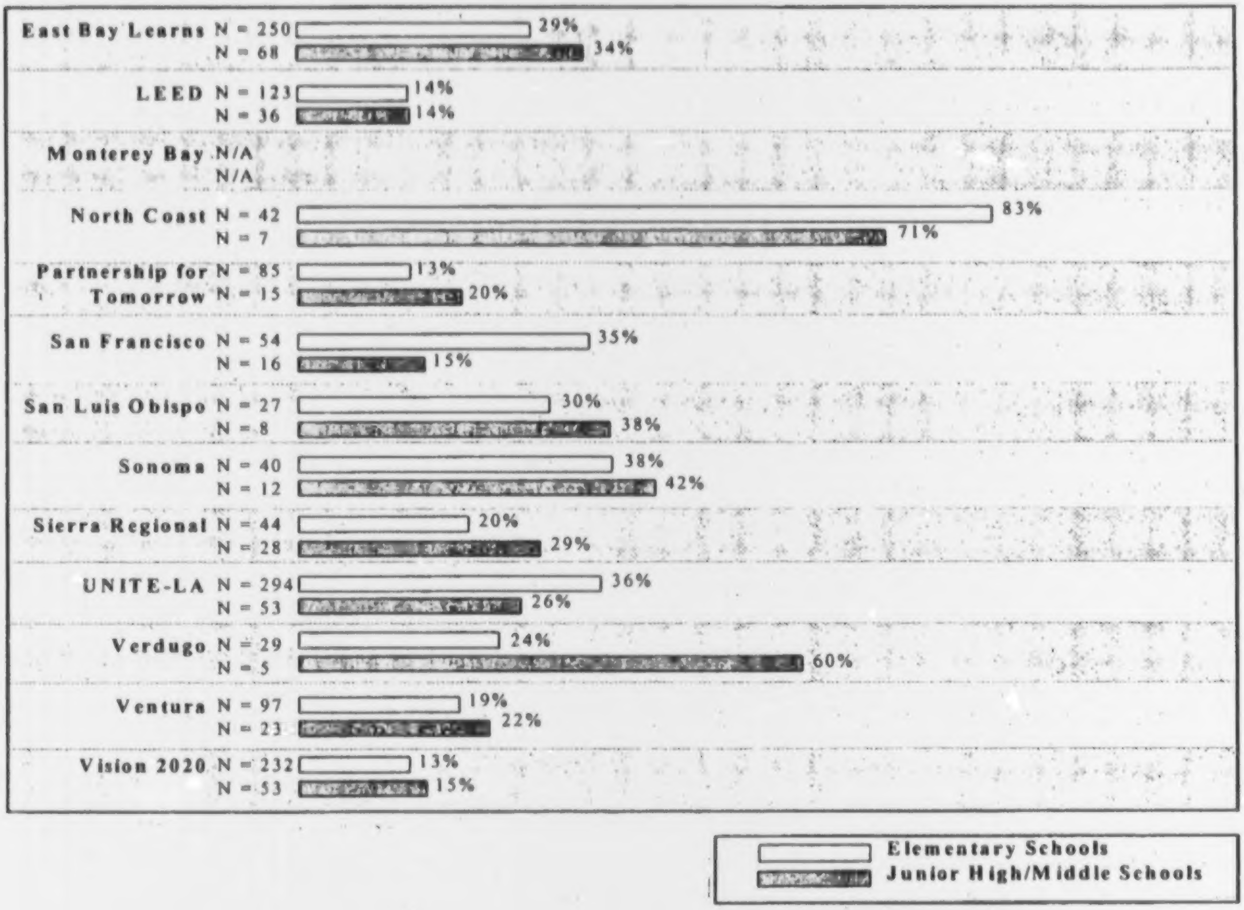
- Eleven out of the 12 LPs for which data are available reported that relatively few elementary and junior high/middle schools have a population of teachers in which at least half understand the purposes of STC. Among these LPs, only 13-38% of elementary schools and 14-60% of junior high/middle schools report that 50% or more of their teachers have a good understanding of STC.
- North Coast was the only LP to report that large percentages of administrators believe at least half of their teachers have a good understanding of STC (83% of elementary schools and 71% of junior high/middle schools). Data from this case study indicate that high percentages of North Coast teachers at each level (74% elementary, 86% junior high/middle, 87% high school) have participated in general staff development about STC, which may explain this finding.

Elementary and junior high/middle school administrators were also asked to indicate the percentage of teachers who link career awareness activities to improved student academic preparation. As Figure D below shows, the percentage of teachers at the elementary level who make this connection is modest in most LPs. At the junior high/middle school level, however, there appears to be a greater understanding of the potential of STC.

- In only 5 out of the 12 LPs for which we have data do more than 50% of elementary school administrators report that at least half of their teachers link career awareness and development activities to improved student academic preparation.
- At the junior high/middle school level, the percentage of teachers making this connection appears substantially higher in most LPs. Specifically, more than 50% of administrators report that at least half of their teachers link career awareness and development activities to improved student academic preparation in 9 out of 12 LPs for which data are available. In two LPs (North Coast and San Luis Obispo), this percentage exceeds 85%. The difference between junior high/middle school and elementary school teachers in this perception may be due to a belief that STC is less relevant for younger students.

Figure C

Percent of elementary and junior high/middle schools in case study LPs in which administrators report that at least half of teachers have a good understanding of STC[25]
(Source = Administrator Survey: VI.1.a)



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[25] The Administrator Survey at the high school level did not ask exactly the same questions as the elementary and junior high/middle school Administrator Survey, since STC activities and programs vary from level to level. Therefore, comparable high school data are not available.

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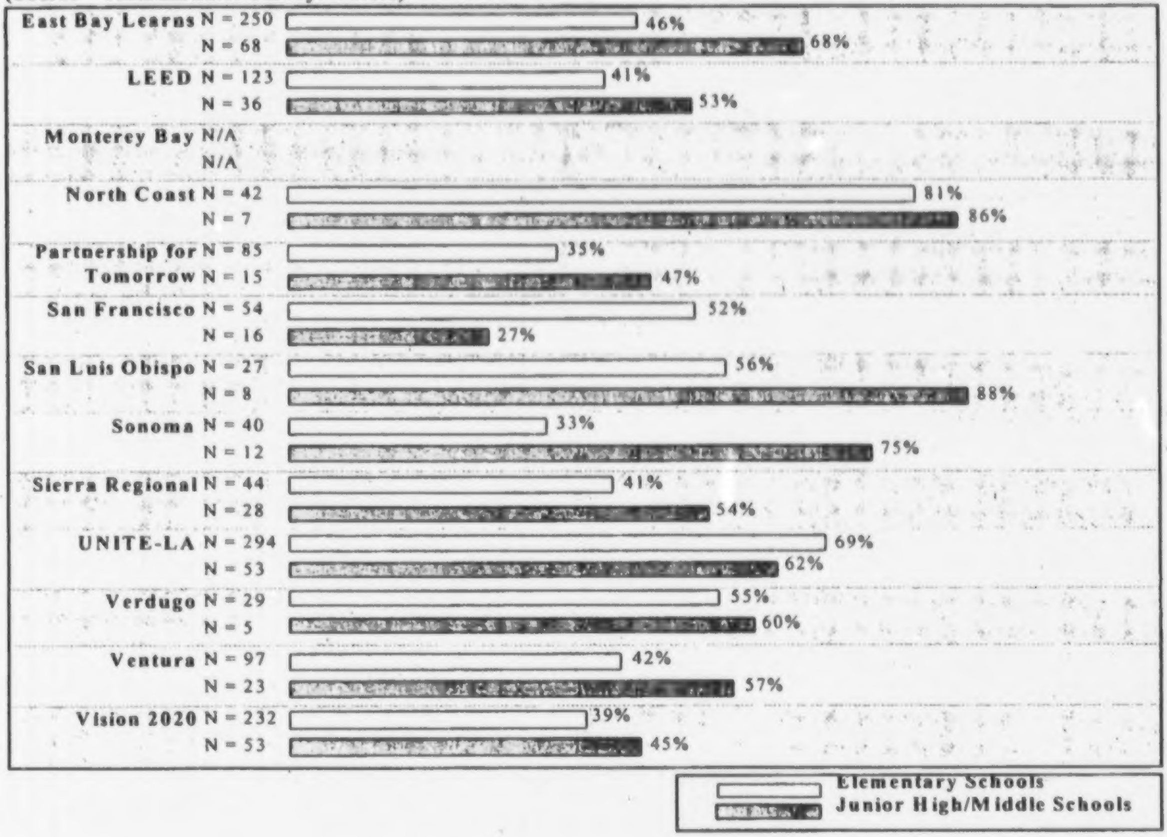
Figure D
Percent of elementary and junior high/middle schools in case study LPs in which administrators report that at least half of the teachers link career awareness and development activities to improved student academic preparation[26]
(Source = Administrator Survey: V1.1.b)



Attitude Toward and Understanding of STC Appear to be Interrelated

While teachers and administrators were not asked specifically about their overall support of STC, a majority of LPs report that teachers at CORE high schools generally support STC efforts. In these LPs, teachers generally tend to take either of two different viewpoints about the benefits of STC: 1) STC is an opportunity to engage all students, promote academic excellence, and encourage continuing education; or 2) STC is a means to reconnect with the marginally engaged students who might not go to college.

Not surprisingly, case study LPs report that **teachers' and administrators' attitudes towards STC appear to be related to their understanding of STC**. For example,

- The East Bay Learns LP reports that teachers and counselors with the best understanding of STC were associated with academies or pathways at their school or were those who had formal exposure to STC concepts through professional

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[26] Ibid.

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development. In addition, they reported that these teachers and counselors believed that career-related curricula and hands-on experiences both serve to engage disaffected and special needs students and benefit students self-identified as college prep.

Professional Development Viewed as Key to Implementing and Sustaining STC

The non-case study LP director interviews indicated that most, if not all, **LPs consider professional development a very important aspect of their work and a key ingredient for sustainability of STC**. In large part, these LP directors believe that professional development is necessary to get administrators and teachers to perceive the value of STC and to enable them to successfully implement various STC efforts in their schools. Box III below lists common objectives of professional development described by LP directors.

Box III
Objectives of STC professional development
(Source: LP director interviews)

- To deepen teachers' understanding of and commitment to STC (e.g., what STC is and why it is valuable)
- To help teachers learn to use new instructional approaches (e.g., integrated curriculum, standard-based learning, project-based learning, problem-based learning)
- To help teachers develop the knowledge and skills needed to carry out specific STC efforts/activities (e.g., career counseling, mentoring, organizing/implementing job shadows and internships, academy development, grant writing)

Data gathered through Administrator Surveys concerning the number of elementary, junior high/middle, and high schools offering different types of professional development opportunities related to STC are presented in Tables 10, 11, and 12 below.

Table 10
Percent of elementary schools in case study LPs that offered STC-related professional development in 2000-2001
(Source = Administrator Survey: VI.4.a)

Activity	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	250	123	N/A	42	85	54	27	40	44	294	29	97	232
General staff development about STC	20%	15%	N/A	74%	18%	17%	11%	10%	7%	19%	31%	12%	4%
Teacher job shadowing, internships, or mentoring	52%	46%	N/A	36%	33%	37%	15%	20%	25%	49%	38%	46%	49%
Opportunities to explicitly learn to teach SCANS skills and competencies	4%	<1%	N/A	17%	4%	4%	11%	43%	0%	6 %	14 %	4 %	1%
Opportunities to learn to develop curriculum materials that integrate academic and career-related content	20%	15%	N/A	57%	13%	24%	26%	20%	16%	33%	17%	20%	8%
Consultation/ collaboration with employers about curriculum	21%	13%	N/A	31%	14%	20%	15%	10%	11%	20%	10%	8%	10%
Communication with junior high/middle school personnel to align and/or coordinate career development activities	13%	12%	N/A	33%	18%	17%	15%	3%	7%	17%	14%	8%	8%

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Table 11

Percent of junior high/middle schools in case study LPs that offered STC-related professional development in 2000-2001

(Source = Administrator Survey: VI.4.b)

Activity	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	68	36	N/A	7	15	16	8	12	28	53	5	23	53
General staff development about STC	13%	22%	N/A	86%	13%	13%	25%	17%	11%	9%	40%	30%	13%
Teacher job shadowing, internships, or mentoring	32%	22%	N/A	57%	40%	31%	38%	25%	11%	30%	60%	43%	34%
Opportunities to explicitly learn to teach SCANS skills and competencies	6%	8%	N/A	43%	7%	0%	13%	33%	0%	6%	100%	13%	6%
Opportunities to learn to develop curriculum materials that integrate academic and career-related content	38%	28%	N/A	86%	40%	31%	25%	50%	25%	19%	80%	35%	26%
Consultation/ collaboration with employers about curriculum	22%	6%	N/A	14%	0%	13%	38%	17%	18%	19%	20%	13%	17%
Communication with high school personnel to align and/or coordinate career development activities	37%	44%	N/A	43%	13%	0%	50%	25%	32%	26%	40%	52%	32%

Table 12
Percent of high schools in case study LPs that offered STC-related professional development in 2000-2001
(Source = Administrator Survey: VI.4.c)

Activity	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
General staff development about STC	33%	46%	73%	87%	44%	55%	89%	70%	68%	46%	67%	74%	30%
Teacher job shadowing, internships, or mentoring	43%	39%	73%	53%	33%	64%	78%	70%	53%	74%	56%	61%	38%
Opportunities to explicitly learn to teach SCANS skills and competencies	20%	24%	100%	40%	22%	45%	22%	30%	32%	23%	67%	48%	22%
Opportunities to learn to develop curriculum materials that integrate academic and career-related content	48%	59%	87%	73%	48%	82%	56%	70%	58%	54%	78%	78%	48%
Consultation/ collaboration with employers about curriculum	36%	41%	80%	60%	37%	73%	56%	70%	37%	31%	44%	65%	34%
Communication with junior high/middle school personnel to align and/or coordinate career development activities	23%	27%	27%	27%	26%	27%	44%	50%	11%	31%	67%	52%	20%

In general, high schools appear to offer teachers the most professional development opportunities in STC, while junior high/middle schools offer teachers more professional development opportunities than elementary schools.

The most common types of professional development activities offered at each level are described below:

- Elementary schools: Teacher job shadowing, internships, or mentoring were the most common professional development opportunities offered in 9 out of 12 LPs for which data are available, and ranging from a low of 15% to a high of 52% of schools providing this opportunity.
- Junior high/middle schools: Teacher job shadowing, internships, or mentoring were available to teachers in at least a fourth of the schools in 10 LPs, as were opportunities to communicate with high school personnel to align and/or coordinate career development activities and develop curriculum integrating

academic and career-related topics. These experiences were available to teachers in at least a fourth of the schools in 11 LPs.

- High schools: Teacher job shadowing, internships, or mentoring; opportunities to develop curriculum about integrating academic and career-related content; general staff development on STC; and to a lesser degree, consulting with employers on curriculum development were the most common professional development opportunities offered within high schools. The availability of these opportunities ranged from LP to LP, from a low of 30% of schools (Vision 2020) to a high of 89% (San Luis Obispo). In general, at least 30% of schools offered these experiences in virtually all LPs.

Professional development is delivered in a variety of ways, including pre-service/in-service workshops during the school year, summer institutes, and written materials (e.g., handbooks outlining procedures for organizing and implementing STC activities such as career fairs and job shadow days). In addition, teacher internships/externships were mentioned frequently as a strategy LPs use for professional development. Overall, the teacher internships/externships aimed to familiarize teachers with business culture and to help them better understand the specific workplace readiness skills and occupational skills needed for different careers (i.e., the skills and concepts teachers need to integrate into their curriculum). It is not clear, however, how many teachers have been able to participate in internships/externships.

A less common, but interesting, means of professional development mentioned by a few LPs was involvement of administrators and teachers in STC learning collaboratives, or industry-specific networks of individuals involved in implementing STC. The learning collaboratives provide a forum for sharing curriculum and best practices.

Several LP directors mentioned the importance of making professional development opportunities very convenient, practical, and meaningful for teachers. For example, one non-case study LP (Workforce Silicon Valley) makes sure to schedule professional development opportunities at times that are most convenient for teachers (i.e., in the evenings and on weekends). This LP also strives to make its professional development offerings productive for teachers by providing school STC teams with planning time during professional development events and making professional development activities hands-on experiences that result in tangible products, such as integrated curriculum units that teachers can use immediately.

Teachers and Administrators See Several Barriers to STC Implementation

Teachers and administrators identified several barriers to implementing STC programs and activities. The most common barriers include the lack of time to develop curriculum or to participate in STC-related professional development, limited funding or resources, and the "disconnect" between STC goals and the goal of raising academic achievement and meeting accountability requirements. Case study LPs also reported that administrators and teachers at some schools do not believe STC is appropriate for college-bound students and therefore do not implement STC in any comprehensive or meaningful way. Moreover, LP director interviews indicate that some schools are hesitant to fully support STC because they are not convinced that involvement in STC activities improves students' academic performance.

Given these perceived barriers, some schools and districts do not invest a great deal of time and energy into STC.

Case study data indicate that across the LPs there are some teachers, counselors, and administrators who have a good understanding of STC, but many who do not. Indeed, many of the barriers described above may result from a lack of understanding of the goals of STC. This lack of understanding can be addressed, to some degree, with meaningful STC-related professional development, as well as convincing evidence about the benefits of STC activities and programs. As will be discussed in the final chapter of this report, for teachers to fully embrace STC, reliable data need to be collected about the impact of STC on student achievement, and STC must be incorporated into California's student assessment and accountability system.

CURRICULUM INTEGRATION STRATEGIES

The practice of curriculum integration can take a variety of forms, including introducing academic content into career-technical classes, incorporating examples from the world of work into academic classes, and creating comprehensive programs where all instruction centers on career major themes. Curriculum integration can involve changing course content within individual classrooms; making structural changes in entire schools; introducing new instructional or pedagogical approaches such as group work; or connecting classroom work to activities in the workplace. Clearly, these different approaches require different levels of time and resources to implement. Box IV below provides examples of strategies that some non-case study LPs have used to enhance curriculum integration.

Box IV
Non-case study LP examples of strategies to enhance curriculum integration

- One LP (Fresno) paid for integration teams over the past three years. Team members have been trained to integrate curriculum and are given responsibility for creating integrated curriculum units.
- One LP (San Bernardino) made aligning STC curriculum to standards a key goal over the past year. Career-technical education teachers worked with academic teachers to find ways to highlight academic skills within their career-technical classes. Academic teachers identified ways to bring more relevance to the content they teach (i.e., to show how it is useful in real-world work contexts).
- One LP (LA Antelope Valley) focused its efforts on creating a systemic, comprehensive career preparation process called "Bridge." Career-related lessons and activities were created by teachers at the high school, junior high/middle school, and elementary school levels and many resources were purchased to support/complement the lessons. The current emphasis on mandated state testing made it necessary to revise the lessons so that they clearly addressed key academic content covered in the standards.
- One LP (El Dorado) includes downloadable lesson plans on its STC Web site. The lesson plans include tips for incorporating SCANS skills.

Data collected through the STW Progress Measures Survey indicate that, at the national level, only about one third of the students in 1,926 LPs participated in integrated academic and work-related curricula (1999-2000 data), and that the percentage was even lower in California (21%). Research investigating the barriers associated with curriculum integration suggests that many academic teachers are concerned that incorporating practical or hands-on learning will detract from the more traditionally defined academic skills that are important for doing well on standardized tests, college admission, and success in college. Moreover, the ability to integrate academic and career-related learning is influenced by a lack of time for teachers to develop curriculum and to meet and plan together across departments.

Curriculum Integration, Though Not Widespread, Increases from the Elementary to the Junior High/Middle School Level

Data collected through the Administrator Survey indicate that the extent to which work/career-related material is integrated into academic curriculum in case study elementary and junior high/middle schools is limited in most LPs (see Figures E and F).

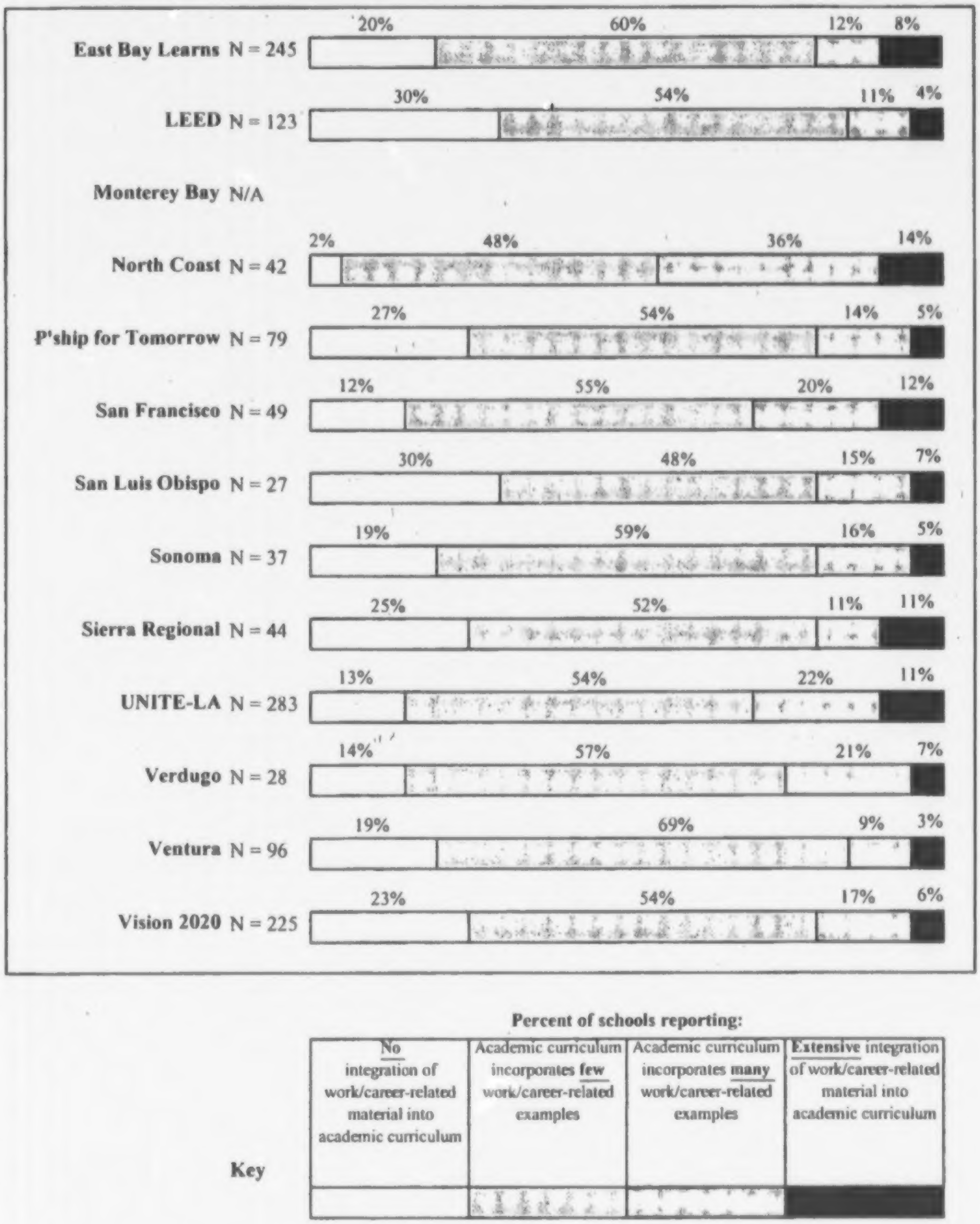
- In the 12 LPs for which we have data related to curriculum integration at the elementary and junior high/middle school level, the majority of elementary and junior high/middle schools report that their academic curriculum incorporates only a few work/career-related examples (i.e., between 48% and 69% of elementary schools and between 48% and 75% of junior high/middle schools).
- The 12 LPs also report that fewer than 15% of the elementary schools responding to the Administrator Survey indicated that extensive integration of work/career-related material into academic curriculum is occurring. Similarly, 5 LPs (out of the 12 for which we have data) indicated that none of the junior high/middle schools reported extensive curriculum integration.

At both levels, the vast majority of schools incorporate few work/career-related examples into the academic curriculum.

Figure E

Degree to which elementary schools in case study LPs have integrated work/career-related material into academic curriculum[27]

(Source = Administrator Survey: II.I.b)



Note: Totals equal approximately 100%, plus or minus 1% due to rounding.

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[27] Ns for LPs for this table are based only on those LPs that chose one of the 4 possible answers in the key.

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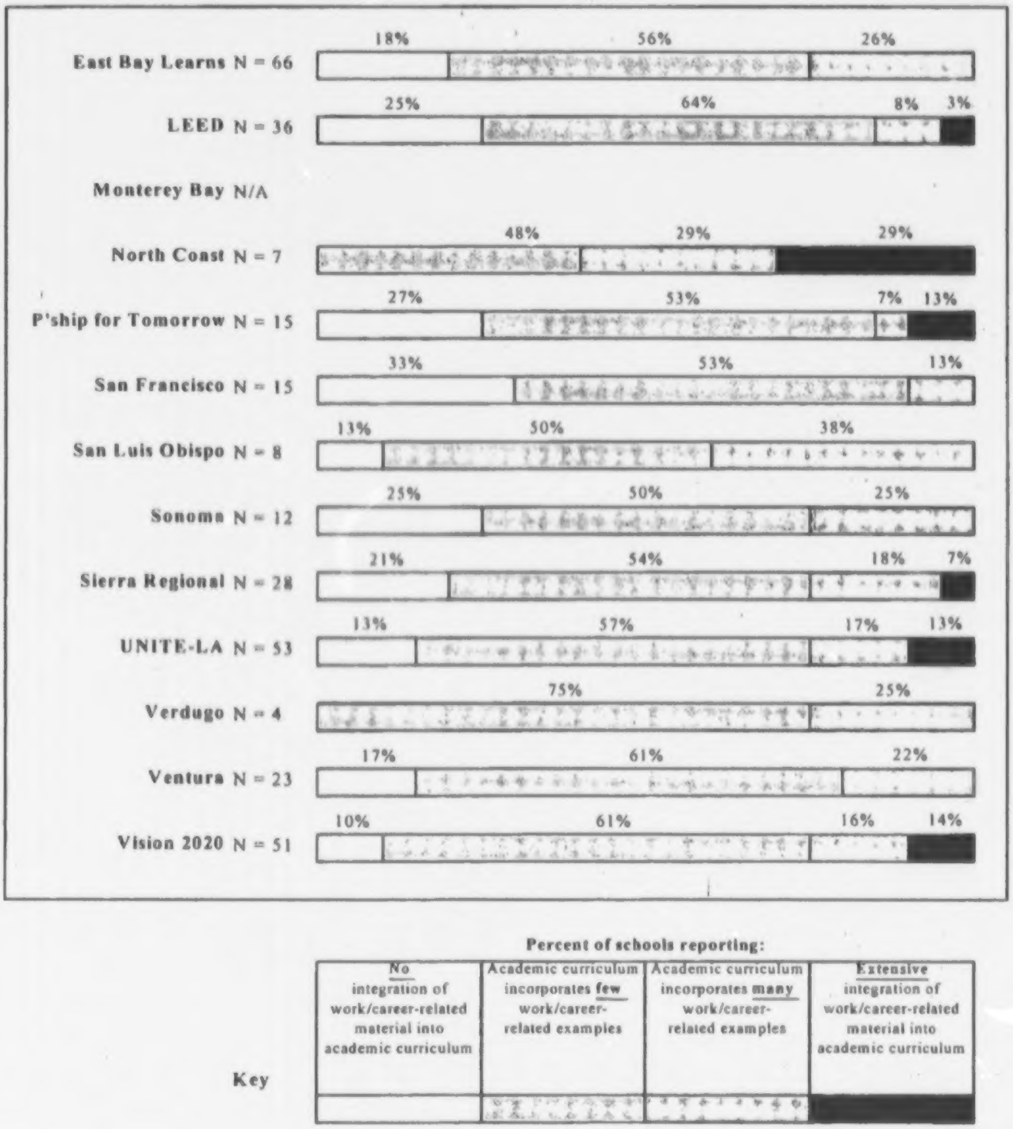
Figure F
Degree to which junior high/middle schools in case study LPs have integrated work/career-related material into academic curriculum[28]
(Source = Administrator Survey: II.1.c)



Note: Totals equal approximately 100%, plus or minus 1% due to rounding.

However, a much higher percentage of junior high/middle schools offer curriculum units about one or more industries or occupations when compared to elementary schools. Specifically, only 3 LPs report that at least 50% of the elementary schools offered these curriculum units; at the junior high/middle school level, 7 LPs report that at least 50% of schools offered this activity.

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[28] Ns for LPs for this table are based only on those LPs that chose one of the 4 possible answers in the key.

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(See Table 13.) Since it is unlikely that junior high/middle school students are taking separate career-related courses, it is evident that academic teachers at many junior high/middle schools in most LPs are making an effort to integrate career information into the curriculum.

Table 13
Percent of elementary and junior high/middle schools that provided curriculum units about one or more industries/occupations in 2000-2001
(Source = Administrator Survey: II.1.a)

	EBL	LEED	MTRY	NC	PFT	SFO	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N (elementary) =	**250**	**123**	N/A	**42**	**85**	**54**	**27**	**40**	**44**	**294**	**29**	**97**	**232**
N (junior high/middle)=	**68**	**36**	N/A	**7**	**15**	**16**	**8**	**12**	**28**	**53**	**5**	**23**	**53**
Elementary Schools	43%	48%	N/A	71%	42%	44%	44%	23%	23%	66%	52%	47%	41%
Junior High/Middle Schools	46%	36%	N/A	100%	53%	38%	75%	50%	43%	55%	60%	52%	43%

Curriculum Integration is Most Prevalent at the High School Level

The Administrator Survey at the high school level did not ask exactly the same questions as the elementary and junior high/middle school Administrator Survey, since STC activities and programs vary from level to level. Rather than asking administrators to report if their schools provided curriculum units about one or more industries or occupations, they were asked if material related to specific career areas or occupational fields was integrated into academic classes in 2000-2001. (See Appendix B for survey instruments.) Twelve out of 13 LPs report that at least 50% of schools stated that material related to specific career areas or occupational fields was integrated into academic classes (see Table 14), and in 6 LPs this type of integration occurred in at least 75% of high schools. **While it is impossible to estimate the number of teachers who integrated curricula, or the number of students affected, it is clear that integration at some level occurred in a substantial number of high schools in 2000-2001.**

Table 14
Percent of high schools that are integrating academic and work/career related curricula
(Source = Administrator Survey: II.1.e)

Activity	EBL	LEED	MTRY	NC	PFT	SFO	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	**69**	**41**	**15**	**15**	**27**	**11**	**9**	**10**	**13**	**39**	**3**	**23**	**50**
Material related to specific career areas or occupational fields integrated into academic classes	65%	66%	67%	87%	67%	82%	44%	90%	63%	82%	89%	70%	76%

The high school Administrator Survey also asked administrators about the types of strategies that are being used to support and promote curriculum integration. (See Table 15.) Results indicate that **the most common integration strategies used are those that require the least amount of time and resources**. For example,

- Across LPs, the most common curriculum integration strategy at the high school level involves individual teachers developing their own contextual learning units or projects. In all LPs, over 70% of schools report using this strategy.
- Other common strategies involve purchasing and/or implementing commercially available applied academics curricula, revising career-technical courses to cover issues related to particular industry or career areas, and implementing state-provided materials/curricula that use contextual learning approaches (at least 50% of schools in at least 10 LPs report using these strategies).
- Less common strategies at the high school level are those that clearly require significant resources, such as team teaching for academic and career-technical education teachers, block scheduling to create more time for contextual and project-based instruction, revising academic courses to cover occupation issues, and collaboration between teachers and employers (or postsecondary staff) to revise or develop new course units.

Table 15

Percent of high schools in case study LPs that used various strategies in 2000-2001 to promote contextual learning, integrate academic and career-technical education, link secondary and postsecondary education, and integrate school- and work-based learning

(Source = Administrator Survey: IV.1.a)

Level of Integration	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
Purchasing and/or implementing commercially available applied academics curricula	51%	54%	53%	93%	63%	55%	78%	50%	63%	62%	44%	65%	56%
Individual teachers/schools developing their own contextual learning units or projects	74%	80%	87%	93%	78%	91%	78%	100%	74%	74%	89%	91%	74%
Implementing state-provided materials/curricula that use contextual learning approaches	51%	49%	20%	67%	56%	45%	56%	60%	53%	77%	56%	70%	56%
Revising career-technical courses to cover issues related to a particular industry or career area	57%	61%	53 %	67%	48%	73%	78%	60%	53%	59%	78%	65%	54%
Revising academic courses to cover issues related to a particular industry or career area	39%	41%	N/A	60%	30%	64%	33%	60%	37%	46%	67%	52%	30%
Pairing academic and career-technical teachers for team-teaching	22 %	27%	53 %	40%	11%	18%	22%	20%	16%	41%	33%	17%	12%

Table 15 (continued)

Level of Integration	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
Grouping teachers together to develop joint curricula that emphasize a career area	39%	44%	73%	20%	33%	36%	44%	50%	26%	49%	44%	48%	28%
Providing common planning periods for teachers in the same career major or pathway	35%	39%	47%	27%	41%	45%	22%	40%	21%	41%	33%	43%	22%
Implementing block scheduling to create time for contextual learning	39%	24%	73%	47%	30%	64%	56%	50%	42 %	28%	22 %	26 %	26 %
Bringing high school and postsecondary faculty together to revise or develop new course units or materials	38%	49%	60%	60%	26%	64%	33%	80%	37%	33%	56%	39%	38%
Bringing faculty and employer representatives together to revise or develop new course units or materials	43%	44%	47%	40%	30%	64%	44%	80%	47%	44%	56%	61%	44%

Curriculum Integration Does Not Appear to be Systemic in Most Schools in Case Study LPs

The North Central Regional Educational Laboratory (NCREL) provides the following definition for systemic reform or change.[29]

> *Systemic change is change that occurs in all aspects and levels of the educational process and that affects all of the people included in this process—students, teachers, parents, administrators, and community members. It is a dynamic process that requires constant communication and evaluation and has implications for curriculum, instruction, assessment, and professional development.*

When applying this definition to case study data, is appears that **curriculum integration is not systemic in any of the 13 case study LPs. While academic/technical curricula integration is occurring at some sites, it is typically taking place in individual classrooms and not throughout the entire school**. Teachers in all 13 LPs reported that lack of time to develop curricula that integrates academic and career information, as well as the need to focus on external accountability requirements such as SAT-9 tests, were the major barriers to systemic integration.

There is some evidence, however, that a more systemic approach to curriculum integration is beginning to take hold in pockets of some LPs, specifically in LEED-Sacramento and the San Francisco School-to-Career Partnership.

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[29] North Central Regional Educational Laboratory Website, 2002.

- LEED reports that two school-wide programs—R.E.A.C.H. and Advocacy—provide opportunities for teachers to work together in groups to develop joint curricula that emphasize a career area. In addition, several high schools in this LP report that they plan to implement block scheduling to support the efforts of their smaller learning communities to include a more career-focus curricula.
- The San Francisco School-to-Career Partnership reports that teachers from several high schools work with both employers and post-secondary institutions to develop curricula and provide common planning periods and block scheduling to facilitate and encourage the integration of career-technical and academic subjects.

There is Little Evidence of a Relationship Between Curriculum Integration and School Characteristics

Few consistent patterns regarding curriculum integration by school characteristics were observed across LPs. Rather, each LP found its own unique variations among schools surveyed. This suggests that curriculum integration is occurring at a wide variety of schools, regardless of the schools' urbanicity and the extent to which the schools serve minority and/or socioeconomically disadvantaged youth. Despite the lack of consistent patterns, however, some LPs report the differences described below.

- More "high implementation" schools appear to be integrating academic and career-related curriculum when compared to schools designated as "other" (4 of 13 LPs report this finding).
- There is also limited evidence suggesting that junior high/middle and high schools serving a greater proportion of socioeconomically disadvantaged youth provide more integrated academic and career-related learning opportunities than schools serving fewer of these students (6 of 13 LPs report this finding).

NEW GRADUATION REQUIREMENTS, STANDARDS, AND OPPORTUNITIES FOR CERTIFICATION

As a school reform strategy, STC calls for students to meet higher levels of achievement and skills. This entails establishing rigorous academic and workplace readiness standards and providing opportunities for students to be recognized for attaining important skills. A major means for motivating students to attain important skills is through awarding industry-recognized certificates. In fact, STWOA calls specifically for WBL opportunities and standards-based assessment that lead to these skill certificates for high school students who master important industry and related academic skills. Another way for schools and districts to promote and recognize higher levels of student achievement is to establish new high school graduation requirements that reflect higher expectations. This section examines how STC has influenced the adoption and implementation of high school graduation requirements, rigorous standards, and opportunities for certification.

STC Drives Some Changes in Curriculum and Graduation Requirements

According to the data from case study LPs, **changes in graduation or curriculum requirements have been driven primarily by district and state initiatives that are not directly related to STC**. For example, the most frequently cited change in high school graduation requirements across LPs is an increase in required units, consistent with eligibility requirements for admission into the University of California system. Reportedly, this change in high school graduation requirements has been made in many districts in order to increase the number of students that meet University of California eligibility requirements, and not because of STC.

Nevertheless, a few schools within several LPs have reported that some changes in graduation and curriculum requirements have been made specifically as a result of STC.

- Career-technical education students are required in some schools to take the Assessments in Career Education (ACE) exams (California's end-of-course and end-of-program exams for career-technical education) or the Armed Services Career-technical Aptitude Battery (ASVAB).
- Other STC-driven requirements include participation in service learning and completion of career interest inventories, portfolios, career-technical education classes, and senior projects (that include service learning or WBL). East Bay Learns, for example, has 7 high schools that require service-learning and senior projects in order to graduate. Los Angeles Unified School District is requiring students to complete 30 credits in a career major/pathway course and a career-related portfolio in order to graduate. In fact, one local district in the UNITE-LA partnership is implementing a Postsecondary Commitment Program where students must be accepted to a postsecondary institution in order to graduate.

Mixed Views on STC's Influence on High Academic Standards

In general, teachers and administrators see STC as a way to make learning more relevant for many students. Across LPs, teachers and administrators from "high intensity" STC schools believe that STC can help provide an impetus to raise academic standards. **Among the more experienced teachers in higher intensity STC schools, STC is viewed as a strategy for teaching and reinforcing academic standards because STC increases student awareness that their future career and education goals depend on their mastery of academic content**. In contrast, teachers from "other" intensity schools see STC as an "add-on" that has no influence on raising academic expectations or increasing student performance on standardized tests.

A common viewpoint shared among teachers in both "high intensity" and "other" intensity schools is that the academic standards at their school are already rigorous, or that their school is in the process of adopting more rigorous standards. Moreover, **the statewide phenomenon of strengthening academic standards is thought to be primarily a response to increased high-stakes testing and accountability requirements, and is only secondarily influenced by other factors, including STC.**

Opportunities for Students to Earn Skills Certificates are Somewhat Limited

Ten of 13 LPs reported that at least some high schools award skill certification (only UNITE-LA, Vision 2020, and Verdugo did not report on schools awarding certification). However, the percentage of high schools that offer certification in these 10 LPs is typically low to moderate. Among the LPs reporting on opportunities for students to earn skill certificates, 5 reported the number of students that were actually awarded such certificates in school year 2000-2001. The numbers of students earning skill certificates in 2000-2001 ranged from 3 to 400, with an average of about 146 students per LP.

The nature and requirements for certification seem to vary across schools and LPs. Most LPs did not report on the career areas in which skill certificates were awarded, although the few that did mentioned computer-related skills certificates (e.g., Ventura, EastBay Learns). Some LPs view skill certification as primarily an ROP function, not directly related to STC, while others award certificates for academy and pathway completion.

LEED and Partnership for Tomorrow developed certification programs at the LP level. Since 1994, LEED has worked with representatives from 8 industries to create the Workforce Skills Certification Program. The program consists of assessment batteries, including portfolio assessments in reading, math, critical thinking, problem solving, and applied performance for different career areas. Although it is not entirely clear how widely supported these certifications are by teachers and administrators, their availability in high schools is already high and appears to be growing. Partnership for Tomorrow created the Hire Me First Employability Skills Certification Program that features SCANS and Total Quality Management and requires service-learning and mock interviews. The district plans to make Hire Me First a local graduation requirement effective in 2003.

CONNECTIONS WITH BUSINESS, LABOR ORGANIZATIONS, CBOS, AND POSTSECONDARY INSTITUTIONS

Perhaps the most basic tenet underlying California's STC initiative is that the viability of STC depends on strong connections between K-12 education (particularly secondary education) with business, labor organizations, CBOs, and postsecondary institutions. There are several reasons why these connections are so critical. Schools count on businesses and labor organizations to provide WBL opportunities for students, give input into curriculum that meaningfully integrates industry-valued and academic skills, and generally help schools and teachers better understand the future educational and career demands for which students are preparing. At the same time, business, labor organizations, and CBOs have vested interests in a successful state STC effort because STC is aimed at preparing today's students to be tomorrow's educated citizenry and productive workers.

A strong connection between secondary and postsecondary education is just as crucial to a successful STC strategy. In California, there is substantial emphasis on STC as a strategy for preparing students for postsecondary education. Done effectively, STC can help some students better learn the academic course content they need to prepare for successful postsecondary entry. In particular, STC programs often attempt to introduce integrated curriculum that provides meaningful context and reinforcement of academic learning through hands-on applications. In turn, postsecondary institutions should benefit as well because fewer students who enter their systems should need remedial courses. A stronger secondary-postsecondary education connection will also provide students with a more complete picture of the range of postsecondary options and career avenues available to them that require postsecondary training but not necessarily a baccalaureate degree.

Given the strong agreement among policymakers and educators about the importance of the connections with business, labor organizations, CBOs, and postsecondary institutions, this section examines four issues:

- what these connections look like;
- what the different parties are doing to maintain connections;
- what the obstacles are to creating effective connections; and
- the likely directions these connections will take in the future.

Employer Involvement in STC Appears Fairly Common

As we previously indicated in our evaluation proposal and other project reports, gathering reliable quantitative data that would allow generalizations about levels of employer involvement in STC throughout the state as a whole would be an enormous and costly challenge. It would require a statewide survey based on a probability sample of all employers. Since this would have been cost-prohibitive, this strategy was not included in the evaluation. Instead, an Employer/Labor Organization Survey was conducted that relied on the identification of employers and labor organizations by LPs. Since LPs provided these contact lists, the survey sample cannot be construed as representative of all of California. Nevertheless, the survey's results allow for identification of some general trends about employer participation. LP case studies and non-case study LP director interviews also provide important information about employer involvement. Findings from these data sources are described below.

Overall, data suggest that employer involvement in STC is becoming fairly common in schools across the state. Many LPs have made recruiting business partners and forging connections between educators and business people a priority. Underlying their efforts in this area is the belief that strong working relationships between schools and businesses, once established, are likely to last over time, even after LP seed money is no longer available.

Data also suggest that employer participation varies from the elementary, to the junior high/middle school, and to the high school level in terms of the level of participation and the type of activities supported by employers. High schools most frequently report employer participation. Employers are more likely to participate in activities that do not require extensive resources. They have also engaged with schools around STC efforts irrespective of the school's demographic make-up. We don't know whether this is due to effective outreach by all kinds of schools, or because of the importance placed on these activities by businesses in diverse communities. Regardless of the reason, this finding is a positive sign that schools are offering all groups of students opportunities to connect with the world of work through school-employer partnerships. Once employers are engaged in STC, they typically want to continue participating, and frequently plan to increase their involvement. However, there are important barriers to overcome.

Employer Involvement Varies at Different Grade Levels

Employer/Labor Organization Survey data indicate that **business involvement is strongest at the high school level and somewhat lower at the junior high/middle school and elementary levels.**

- Employers responded that they most frequently had STC relationships with their local high schools versus elementary and junior high/middle schools (66% versus 38% and 37%, respectively[30]).
- Data from the survey also indicate that private sector participation rates with public schools tended to increase as the age of students increased. Although under 30% of the private sector employers reported relationships with local elementary and middle schools, proportionately twice as many (59%) reported being involved with local high schools.

Interestingly, data from the Administrator Survey suggest a slightly more complex picture when examining employer involvement at the elementary and junior high/middle school levels.[31] While Employer/Labor Organization Survey data suggest that employer involvement was about the same at these two grade levels (38% vs. 37%), the pattern of involvement varies from LP to LP when examining case study data. Specifically, of the 12 LPs reporting elementary and middle school data, 4 LPs report a higher level of involvement at the junior high/middle school level, 6 report a higher level of involvement at the elementary level, and 2 report that involvement at the two levels were about the same. (See Figure G, which shows the percentage of elementary and junior high/middle schools that have established partnerships with one or more employers.) This lack of a consistent pattern of employer involvement across LPs may be due to the fact that LPs used different strategies encouraging employer/school partnerships and may have chosen to focus their efforts more heavily at one grade level than another. For example, some LPs may believe that elementary school staff are a more receptive audience to STC, given the culture of collaborating and implementing reform strategies, and may have focused their efforts at increasing employer partnerships at this level. Other LPs may have chosen *not* to focus on increasing employer partnerships at the elementary level because of concerns that some teachers might believe that STC is more appropriate for older students.

Whatever the reasons for the discrepancies between the findings of the Employer/Labor Organization Survey and the findings of the Administrator Survey, it is important to note that employer involvement at both the elementary and junior high/middle school levels is fairly low in many case study LPs. Specifically, 7 LPs report that fewer than 50% of elementary schools have partnerships with one or more employers, and 6 LPs report that fewer than 50% of junior high/middle schools have partnerships with one or more employers. Moreover, involvement at these level appears to be significantly less than at the high school level. Since high schools comprise only 12% of the public schools in the state while more than 73% are elementary schools, and 15% are middle schools,[32] these data suggest that **if the STC initiative is to be a**

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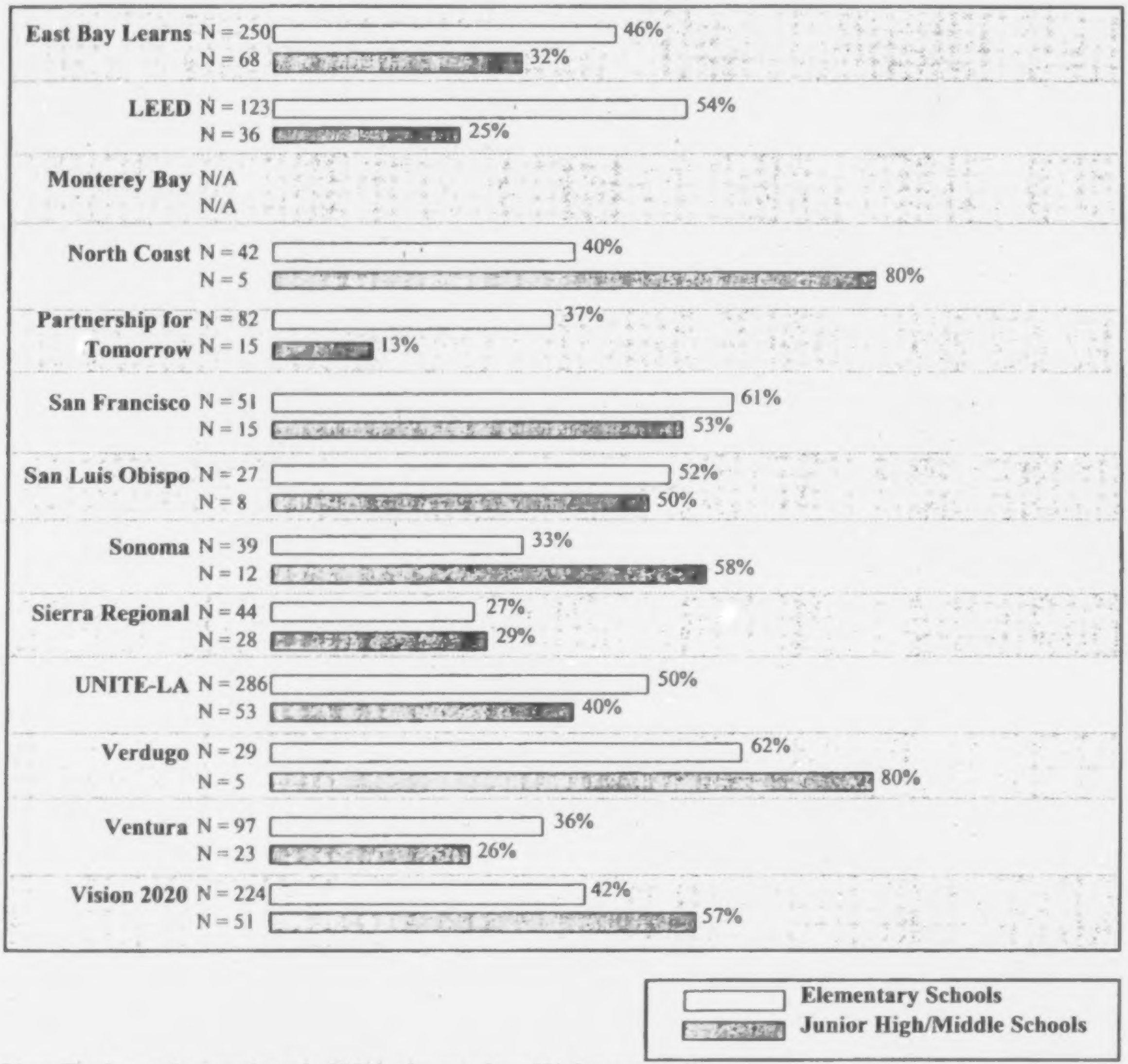
[30] Sums to more than 100 percent due to multiple responses.

[31] The Administrator Surveys varied from grade level to grade level. At the elementary and junior high/middle school level, administrators were asked to indicate if they had established relationships with one or more employers during 2000-2001. At the high school level, this question was not asked. Instead, employers were asked to indicate the total number of employers providing different types of STC activities. Therefore, direct comparisons between data at all three levels cannot be made.

[32] Education Data Partnership (EdData) (On-line). Available http://www.ed-data.k12.ca.us/dev/State.asp

comprehensive effort, the relationship between employers and elementary and junior high/middle schools must be strengthened.

Figure G
Percent of elementary and junior high/middle schools in case study LPs that have established partnerships with one or more employers
(Source = Administrator Survey: VIII.4.a and VIII.4.b)



Note: Totals equal approximately 100%, plus or minus 1% due to rounding.

Employer Involvement is Concentrated on Low-Intensity Activities

In addition to examining the level of employer involvement, data were also collected related to the types of STC activities in which employers were engaged. These data are summarized below.

- At the elementary and junior high/middle school levels, case study data indicate that the five types of employer-supported activities that are common across both grade spans include community service/service learning, student awards, donations, guest speakers, and tours of businesses/field trips. At these levels, employers are less involved in curriculum development, providing mentoring and job shadowing experiences for students, and internships for teachers.
- While there appears to be significant overlap in the activities that employers are involved in across grade levels, case study LPs report that high school involvement is distinguished by higher frequencies of job shadowing and the addition of some high-intensity WBL activities, such as internships. **Although employers report that they most value high-intensity activities and believe these activities have the greatest impact on high school students, their greatest level of involvement seems to be in low-intensity activities, such as guest speaking, donations, job shadowing, and work site visits. Employers appear to be less involved in activities such as student or teacher internships, curricular development, and mentoring.**
- Non-case study LP director interview data mirror those found in the LP case studies with regard to the types of employer-supported activities that are most commonplace. LP directors report that employers are most heavily involved in low-intensity activities such as providing guest speakers (e.g., in classrooms and at career fairs) and hosting job shadowing activities.

Employers are Motivated to Serve Students and Benefit Business

According to data from the case study LPs and the Employer/Labor Organization Survey, the specific reasons for employer involvement in STC are varied. However, they seem to reflect a balance between two objectives: serving students and benefiting business. Hence, **employers seem to believe that an education-business relationship should be mutually beneficial**.

- With respect to reasons for business involvement that benefit students, employers indicated during case study interviews that they wanted to:
    - expose students to the "real world" and give them a sense of workplace demands;
    - provide students with opportunities to explore career options, extend their academic experiences, and develop work readiness skills; and
    - familiarize students with a particular career field.
- Reasons cited for involvement that primarily benefit business include:
    - developing the future work force (cited most often in the more rural regions);
    - recruiting future employees;
    - filling part-time positions or meeting immediate work demands; and
    - demonstrating community involvement.

- Data from the Employer/Labor Organization Survey are consistent with these findings. When asked to list the top three factors that affected their company's participation in STC, the three most frequently mentioned objectives were to:
    - promote students' awareness about specific careers and industries (53%);
    - provide realistic expectations of work (47%); and
    - promote a good public image for the company (25%).

Again, these data suggest that employers are motivated by a desire to help both students and their companies.

There are Significant Barriers to Employer Involvement

Despite the existence of substantial employer involvement with schools, there are important barriers to overcome. Several barriers to employer involvement were described by the case study LPs.

- Limitations that hinder employer participation include lack of employer time and resources, frequent employee turnover, and the corporate bureaucracy that employers and employees must work through to secure permission to participate in STC activities. Perhaps the most surprising barrier cited is a lack of adequate communication between schools and businesses.

- Barriers related to students and schools include lack of time in students' schedules for STC activities, lack of preparation of students for the workplace (as perceived by some employers), and schools' focus on assessment and standards. Other barriers were related to access, including geographic distance between schools and businesses as well as mismatches between local industries and student interests (e.g., a region that is primarily agricultural may not have many WBL opportunities for students interested in health careers).

Despite Barriers, Future Business Involvement Appears Promising

The future for business involvement in STC seems relatively promising, but appears to need more concerted nurturing by schools in order for the business-education relationship to thrive. **Most case study LPs report that employer involvement will either increase or stay the same**. The few employers who plan to decrease their level of involvement usually cited capacity issues (e.g., limited time and financial resources) as the reason, rather than negative experiences with schools and students. In fact, many employers report that they would increase their participation in STC activities, if schools would ask. Some employers reported taking the initiative for participating in STC activities by calling schools periodically rather than waiting to be contacted by the schools.

Data gathered from interviews with non-case study LP directors and from the Employer/Labor Organization Survey reveal similar results. These directors report that employers seem to enjoy their involvement in STC and will likely continue to participate in the future as long as schools ask and provide some structure around participation. Less than 3% of participating employers who responded to the Employer/Labor Organization Survey expect to decrease their roles in STC activities, and between 26% and 38% of these employers expect to increase their involvement with additional job shadows, field trips, speaking engagements at schools, and student internships. (Box V lists some specific strategies for connecting schools and businesses.)

Box V
Selected strategies to connect schools and businesses

1. ***Have LPs or a specific designee assume the role of central liaison between schools and businesses.***
2. ***Form business/education alliances to recruit business partners and link them with schools.***
3. ***Form industry-specific learning collaboratives where networks of educators and business people work together to implement STC and share best practices.***
4. ***Use existing partnerships with CBOs (such as the Chamber of Commerce) to forge new relationships with employers.***
5. ***Invite employers to participate in STC decision-making and advisory boards.***
6. ***Create STC databases that contain employer contact information, available WBL opportunities, and history of STC activities.***

STC Participation by Labor Organizations is Very Limited, Possibly Reflecting Conflicting Definitions of STC Goals

Consistent with the results of this study's Employer/Labor Organization Survey, the **case study LPs report very limited levels of involvement of labor organizations in STC activities**. Apparently, many labor organizations have a narrow view of the ways in which they can work with schools to provide career development or WBL activities. Labor organizations appear to believe that they can only offer hands-on learning activities, and these are the ones that often cannot be accommodated because of Occupational Safety and Health Administration (OSHA) regulations.

The lack of labor participation in STC was highlighted at a number of points in the evaluation. For example, LPs were able to identify only small numbers of labor organizations to participate in the Employer/Labor Organization Survey. In addition, virtually all of the case study LPs report that most of their CORE high schools could not provide evaluators with any of the names of labor organizations with which they were working.[33] When several of the LPs discovered that no labor organizations were apparently working directly with their CORE schools, evaluators interviewed labor organization representatives who were working in an advisory capacity to the LP. Overall, the number of labor organizations interviewed for each case study ranged from 0 to 4. Eight of 13 LPs interviewed two or fewer labor organization representatives. Findings related to labor organization involvement are discussed below.

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[33] A contributing factor to the apparent low level of labor organization involvement may be schools failing to distinguish between "employers" and "labor organizations" when providing LP case study evaluators with contact information for interviews. Many LP case studies report that obtaining accurate and useful contact information from employers and labor organizations was highly problematic, and several evaluators mistakenly classified labor organizations as employers. Clearly, additional efforts need to take place at the school, district, and LP level to track employer and labor organization involvement.

- **One major reason for limited labor organization participation cited by case study LPs and in non-case study LP director interviews involves student access issues.** Labor representatives indicate that many students are not eligible to take advantage of activities labor organizations would like to offer because of minimum age requirements stipulated under OSHA regulations (i.e., students must be at least 18 years of age). Likewise, they report that many of the skills needed for participating in WBL opportunities supported by labor organizations are not developed in some schools (e.g., electrical or auto mechanic skills). This finding is consistent with the results of the Employer/Labor Organization Survey, where students' lack of qualifications and/or skills was perceived as a major factor affecting labor organization participation in STC. Finally, student and school access is limited in some geographic areas due to a lack of labor organization presence.
- Another significant barrier affecting level of participation is the perceived differences in the educational pathways promoted by schools and those required by workers in many union-affiliated positions. Specifically, a number of case study LPs report that **the idea that "every student should attend college" may have a negative impact on labor organization involvement**. Available labor organization experiences are often not perceived as suitable or appropriate for college-bound students. As one case study LP reported, "Many [labor organizations] have ceased to be active due to their perception that the district does not support educating youth about the skilled trades as a legitimate alternative to careers requiring a college education."
- Although the labor organizations interviewed said that their current level of STC involvement would likely stay the same or increase in the future, given the very limited participation rates of labor organizations at the present time, the future of labor involvement is uncertain. **There appears to be a significant communication gap between labor organizations and schools about the mutual benefits of strong connections**. If this gap is to be bridged, schools must realize that the benefits of connections with labor organizations go beyond exposing students to "blue collar jobs." For example, all students can benefit from learning about the American labor movement, employee rights and union protections, and labor history and law in general. In addition, labor organizations have an important presence in sectors that require postsecondary education, such as education, health care, and public and government service. In short, just as schools may need to reach out to more employers, they may need to do the same with labor organizations, in both cases focusing on the diverse ways that these groups can support STC programs.

CBOs are Occasionally LP Leaders, but Often Have Limited Presence

There is great variation across case study LPs with respect to the level of current involvement of CBOs in STC activities. All of the 13 LPs reported at least some involvement with CBOs. At the low end, participation was limited to board membership and information sharing. Other LPs had relationships with CBOs that involved a high degree of cooperation on a range of STC projects including internships and job shadowing. Overall, CBOs tend to serve three different functions:

1. serve as conduits between schools and the business community (i.e., helping to link schools and businesses);
2. fulfill part of schools' community service/service learning requirement; and
3. act as "advisors" on LP boards and advisory committees.

The major barriers to CBO involvement in STC include the following: limited financial resources and time to devote to STC (exacerbated by reliance on voluntary staff in some CBOs and high turnover rate for CBO staff in others); lack of recognition of the similarity between their mission and that of STC; and access issues (e.g., there are fewer CBOs in some communities than others).

The future of CBO involvement in STC differs by LP. Those LPs that were working with CBOs prior to the STC movement and see their missions as related (i.e., focused on youth) expect the relationships they have formed to continue into the future. Newly formed relationships with CBOs that were initiated with STC funds seem a little more precarious (e.g., CBO assistance in building an STC Web site).

Attitudes of Business, CBOs, and Labor Organization Staff Are Generally Positive About Potential STC Effects on Students

Employers (as well as CBOs and labor organizations, but these data are limited) seem confident that WBL opportunities help promote work readiness, but are unsure if such opportunities influence academic achievement. Similarly, employers report some sense that high-intensity activities, such as WBL, are more likely to make a difference for students. Many also believe that WBL helps increase the relevance of the high school experience, thereby motivating students to do better in school and perhaps even consider postsecondary education. Interestingly, this confidence in the value of WBL and STC for students is not based on actual student outcome data, since schools do not collect the pertinent STC impact data to report to their business, CBO, or labor partners. Consequently, there appears to be a low level of awareness on the part of employers of the actual impact of STC/WBL opportunities on students.

STC Supports Existing Connections Between K-12 and Postsecondary Institutions

As was discussed earlier (see Table 9), many LPs report that a significant percentage of high schools in their LPs have connections with postsecondary institutions. Specifically, all 13 LPs reported connections to community colleges, either by reference to a specific community college or to community college-based programs such as articulation agreements and dual credit or enrollment agreements. In contrast, connections with four-year colleges are less common. A few LPs, however, specifically referred to connections with four-year institutions, and one reported that a four-year school offered an internship and another provided a summer program. Other connections to four-year institutions focused on the LPs facilitating student admission.

Box VI below provides several specific examples of connections between secondary and postsecondary institutions in non-case study LPs.

Box VI
Strategies used by non-case study LPs to strengthen secondary/postsecondary connections

- One LP (San Mateo) has worked hard to foster connections with individual college departments. For example, the LP arranged for a group of high school students to visit the aviation department at a local community college to tour the department and hear presentations related to aviation and the aviation-related programs offered by the college.
- A community college within one LP (Butte) used Tech Prep funds to organize and host a career day for junior high/middle school students. While on campus, students also had the opportunity to visit classrooms and ask college students questions.
- Within one LP (Riverside), college students from UC Riverside served as mentors to high school students interested in pursuing careers in the medical field.
- Within one LP (Solano), high school students took a field trip to UC Davis law school. While there, students attended law classes and had the opportunity to speak with both college students and professors. In addition, law students from UCD mentored high school students. The UCD biotech center placed 22 high school students in internship labs.
- One LP (Fresno) paid for a half-time counselor for high school students through the community college. The number of high school students who enrolled at the community college after graduation increased from 5% to 40%.
- One LP (LA Antelope Valley) worked with some postsecondary institutions to develop a network for sharing information about postsecondary options/resources (e.g., putting together a list of postsecondary resources, making public agencies aware of the list, and posting it in public places).

Despite the prevalence of these secondary-postsecondary relationships, data suggest that most of these connections are difficult to attribute to STC as opposed to other initiatives, such as Tech Prep or A-G requirements. In general, these connections tend to reflect pre-STC connections, as opposed to new, innovative strategies, such as K-16 curriculum sequencing (see Table 16).

- The most common types of connections reported by case study LPs and non-case study LP director interviews include dual enrollment of students and articulation agreements (e.g., college credits awarded for college level courses taken while attending high school and/or for advanced standing).
- Less common connections include: sharing labor market information, sharing employer networks and contacts, sharing equipment, having joint advisory committees, offering joint staff development, and using common standards for cooperative education.

- Non-case study LP director interviews indicate that postsecondary institutions are occasionally assisting high schools with major/pathway or academy development; providing career counseling to high school students on college campuses; placing college student tutors in high schools; sending speakers to high school career fairs; and working with industry partners to define skill sets, which they incorporate into the college curriculum and share with high schools. While these different types of connections exist, it is not clear how widespread these activities are or how many students know about or take advantage of these opportunities. Clearly, obtaining these data should be a focus of further study.
- The case study LPs report no notable statistical relationships between school or student characteristics with type and frequency of secondary/postsecondary connections. That is, the connections between secondary and postsecondary institutions are not dependent on characteristics of schools, such as urbanicity, or on characteristics of students, such as minority status, but are instead widely implemented.

Table 16
Percent of high schools in case study LPs reporting various connections to postsecondary education or training institutions in 2000-2001
(Source = Administrator Survey: VIII.7.a)

Activity	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N=	69	41	15	15	27	11	9	10	19	39	9	23	50
Dual enrollment agreements	94%	76%	67%	73%	67%	91%	67%	100%	84%	95%	89%	70%	68%
Articulation agreements granting college credit	57%	61%	60%	53%	59%	64%	56%	60%	53%	79%	89%	52%	62%
Articulation agreements granting advanced standing	49%	54%	53%	60%	52%	73%	67%	70%	42%	64%	67%	43%	56%
Sharing labor market information	33%	24%	7%	33%	15%	55%	33%	60%	32%	28%	67%	30%	32%
Sharing employer networks and contacts	32%	27%	0%	27%	19%	64%	33%	70%	47%	49%	56%	48%	32%
Sharing equipment	16%	20%	0%	33%	19%	64%	11%	30%	26%	31%	33%	26%	12%
Joint advisory committees	26%	22%	60%	40%	33%	45%	11%	30%	53%	21%	78%	52%	28%
Joint staff development	13%	27%	40%	7%	7%	36%	0%	40%	26%	18%	22%	35%	10%

Table 16 (continued)

Activity	**EBL**	**LEED**	**MTRY**	**NC**	**PFT**	**SF**	**SLO**	**SNMA**	**SRA**	**ULA**	**VDGO**	**VTRA**	**V2020**
N=	**69**	**41**	**15**	**15**	**27**	**11**	**9**	**10**	**19**	**39**	**9**	**23**	**50**
Common standards for cooperative education	10%	29%	0%	20%	11%	36%	0%	50%	32%	10%	44%	17%	12%

Teachers, Administrators, and Employers Generally View Secondary/ Postsecondary Connections as Positive

As previously noted, teachers and administrators believe that it is difficult to discern whether connections are attributable to STC exclusively. **Despite this uncertainty, many note that STC can serve as a catalyst or vehicle for forging connections between secondary and postsecondary education and that STC may be changing student attitudes about going to college** (e.g., STC helps some students see a long-term career plan versus going to college as simply "the thing to do"). Similarly, employers see STC as providing exposure for some students who may not have considered going to a community college or a four-year college; easing the transition between K-12 and postsecondary education (e.g., providing exposure to college environment and structure); and helping students make academic connection between K-12 and postsecondary (i.e., creating an educational continuum). However, with respect to the future of secondary/postsecondary connections, teachers and administrators were vague but generally positive.

Connections Between STC Partners Appear Durable But Can Be Strengthened

In summary, **all the case study LPs reported that involvement of businesses, labor organizations, CBOs, and postsecondary institutions would likely stay the same or increase**. Interestingly, across all types of partners, it appears that the relationships that existed prior to STC are ones that are reported as likely to continue. This is cause for cautious optimism regarding the durability of connections. At the same time, the current relationships are not uniformly strong, particularly the connections to labor organizations or the involvement of CBOs. Educators need to communicate a clearer message about how employers, labor organizations, and CBOs can contribute to STC, especially through low-intensity activities that do not require large resource investments or placement of students in work settings. The findings suggest that much work needs to occur to strengthen and maintain existing connections while also forging new ones.

- **Employers report that as long as schools provide structure for STC, they will participate**. In the case studies, many LPs touted the importance of the STC liaison/coordinator to maintain what is sometimes a precarious connection between schools and employers. Similarly, **most LP directors who were interviewed pointed to the need for STC liaisons/coordinators to help forge, build, and maintain connections between schools and businesses**. A coordinator familiar with both the business and school culture can help build and maintain strong working relationships, can serve as the central line of communication between schools and employers, and can deal with the logistical issues related to maintaining the partnership. Given teachers' and business people's limited time, the presence of a coordinator/liaison can be crucial for managing the connection between schools and business.

- Another factor that employers say would contribute to the durability of the business connection is incorporating STC in company policy or structures (e.g., Human Resources). **A threat to the durability of the business connection is that employers feel underinformed about STC programs** at schools and believe their potential to contribute is underutilized.
- With respect to labor organization involvement, durability of connections seems to be a smaller issue than establishing connections. **The very limited involvement of labor organizations in STC point to a need for strategic outreach and communication** about mutual benefits.
- While LPs reported that it is difficult to discern the impact of STC on secondary/postsecondary connections, it appears that **STC is contributing a rationale and structure for bringing high school and postsecondary institutions together**. To create stronger connections, STC should be heavily promoted as a key vehicle for improving academic achievement. Then, secondary and postsecondary partners could work on a strategy that goes beyond A-G, collaborating on curriculum content and standards, and possibly assessments. Given that California postsecondary segments are dissatisfied with the amount of remediation that is necessary with incoming students, stronger connections might help prepare students more adequately for successful transitions.
- It is difficult to assess whether secondary/postsecondary connections are making a difference for students. In fact, it is not clear how many students know of and therefore can take advantage of some of these connections. **Student participation rates and impact data are not being systematically collected but should be in order to ensure STC's effectiveness, and hence promote its durability.**

CHAPTER VI
STUDENT OUTCOMES

BACKGROUND AND ANALYTICAL PERSPECTIVE

In 1998, California policymakers and education leaders endorsed the STC initiative as a comprehensive way to improve educational and career outcomes for all of the state's students. They promoted STC-type education reforms as a way to help students make better choices about their future educations and careers. Similar to the federal approach, California's leaders established STC as a broad and flexible vehicle that schools and school districts could tailor to their local needs and use to help raise students' aspirations for the future and give students the tools to achieve their educational and career objectives. High schools throughout the state have responded to this flexible STC model by introducing a wide variety of configurations of STC activities. Some offer a full range of career awareness and exploration activities and enroll some proportion of students in career-focused curricula. Other schools have largely confined their STC efforts to low-intensity career awareness activities. Students have responded to the STC options provided by their schools by participating in varying combinations of STC activities.

The analyses described below explore the following hypotheses that were derived from the state's STC policy statements and served as the foundation for this evaluation of STC in California:

4. Students who participate more extensively in career awareness and career exploration (i.e., WBL) activities and those who follow a career-focused curriculum (i.e., academies, career majors/pathways, or Tech Prep) will display more positive attitudes about their school experiences; will be more engaged in learning while in high school; and will hold more positive attitudes about their preparation for the future than students who did not have these experiences.
5. Students who participate more extensively in these STC activities will display better high school academic performance records and display higher postsecondary enrollment rates.
6. Among students who choose not to continue their education immediately after high school, those who participate more extensively in various STC activities while in high school will experience more positive early employment outcomes than their peers who did not have these experiences.

These are very high expectations for a school reform initiative, like STC, that is highly variable in its intensity and content. As we described earlier in this report, schools in California have followed the state model and adopted STC elements to varying degrees. They rarely require high school students to participate in most STC activities, and there are still conflicting views among educators about which students will benefit from various parts of the STC approach. Many California high schools offer a variety of career awareness and career exploration activities and involve *some* students in some type of career-focused curriculum. **However, the preponderance of schools in this study have adopted only career awareness activities as a widespread and consistent part of the high school experience they deliver to *all or most* students.** As a result, like any other incremental educational improvement strategy, STC can be expected to affect students gradually over a period of time and to produce some effects that are stronger and more consistent than others. Consequently, across the LPs in this evaluation, it is reasonable to expect that STC will have the most consistent influence on students' attitudes about school and about their preparation for careers—which are relatively easy to affect—and more limited effects on behavioral outcomes.

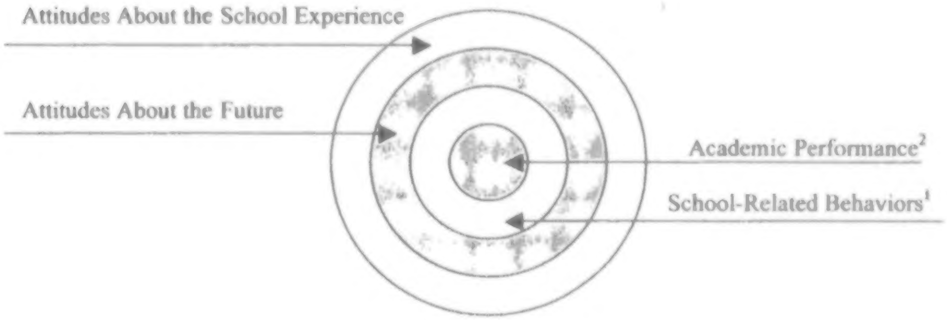
Why is it important for STC to change student attitudes? From our knowledge of STC implementation—and of school reform more generally—our theory of action about STC is that:

1. changes in high school students' attitudes about school and learning will be the first and strongest results when schools pursue STC strategies; and
2. these changes will subsequently lead to shifts in academic and employment-related behaviors.

More specifically, if STC education reforms aim to increase students' engagement in learning, they must make school more interesting and help students understand why doing well in school is important. Changes in academic and employment behaviors will take longer and be more difficult to effect, particularly because they also depend heavily on long-term influences, like educational experiences in elementary and junior high/middle school, and factors that are outside of schools, such as lifelong socialization processes and the state of the job market.

Figure H depicts this conceptual model of STC participation and student outcomes. It shows how education reform efforts can be expected to first reach the outer rings of the target—attitudes about the school experience and preparation for the future; they may also, but to a lesser degree, affect behaviors that reflect engagement in school, such as attendance or taking more difficult courses; and they will ultimately, but only over a longer period of time, impact the center of the target—measures of academic performance, such as grades or standardized tests.

Figure H
Conceptual model of STC participation and student outcomes


Attitudes About the School Experience
Attitudes About the Future
Academic Performance[2]
School-Related Behaviors[1]

[1] School-related behaviors: attendance; course taking
[2] Academic performance: grades; test scores

We used this conceptual model to structure the analyses of student outcomes that follow. In these analyses, we first consider how the intensity of high school students' participation in STC activities relates to their attitudes about their education and about their preparation for the future. Subsequently, we examine relationships between STC participation and attitudes that reflect engagement in learning, behavioral measures of engagement in high school, academic performance, enrollment in postsecondary education, and early employment experiences.

RELATIONSHIP BETWEEN STUDENTS' PARTICIPATION IN STC ACTIVITIES AND THEIR ATTITUDES ABOUT THEIR EDUCATIONAL PREPARATION FOR THE FUTURE

This section describes findings from the CORE data analyses concerning connections between the intensity of high school students' participation in STC and their attitudes about their educational preparation for the future. Based on Senior Survey data from 14,412 students in the 13 LPs that participated in the CORE evaluation, these relationships involved students':

- attitudes about their educational experiences, including STC-related activities; and
- attitudes about their futures and their preparation for further education and careers.

How Does STC Influence Attitudes about the School Experience?

Students who have had a positive high school experience are more likely to have a positive outlook on the general importance and value of education and a more optimistic view about their preparation for future careers. Has participation in STC activities positively influenced students' perceptions of their school experience? Has it affected their feelings about being prepared for future careers?

STC Participation Helps Develop Positive Attitudes About School

A major finding of this study regarding the influence of STC participation on students' attitudes is that STC **appears to have strong and consistent effects on a constellation of attitudes that reflect a positive educational experience. In particular, students with more intense STC participation were more likely to know about and value career-related activities at their schools and to feel prepared for future employment.**

This finding is supported by the data presented in Table 17. For each case study LP in the evaluation, this table shows statistically significant relationships between five measures of STC participation and attitudes of high school seniors about their school experience. The five measure of participation include:

- number of career awareness activities;
- number of career exploration activities;
- students' report of participation in career-focused curricula (e.g., career academy, career major/pathway, or Tech Prep);
- number of students participating in combinations of career awareness, exploration and career-focused curricula; and

- school classification of students as having participated in career-focused curricula (see Chapter II regarding student classification).

The data demonstrate strong and consistent positive effects of STC participation on students' attitudes about how school has prepared them for jobs, has given them chances to learn needed skills, has provided useful guidance for careers, and has made career-related activities available.

Table 17
Summary of statistically significant relationships between selected measures of participation in STC activities and 2000-2001 California high school senior attitudes about high school, by type of STC participation measure and LP

	Student Attitudes about the School Experience																			
	School prepared me to get a good job right after high school					School gave me a chance to learn needed skills					School provided useful guidance for careers					I know career-related activities are available at school				
Key STC participation measures	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
East Bay Learns	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
LEED	•	•	•		•	•	•	•	•	•	•	•	•			•	•	•	•	•
Monterey		•	•	•			•	•	•		•	•	•			•	•	•		•
North Coast		•	•	•	•			•		•		•	•	•	•			•		
P'ship for Tomorrow		•	•	•	•		•	•		•	•	•		•		•		•		•
San Francisco		•	•	•	•		•	•			•	•	•	•	•	•	•	•	•	•
San Luis Obispo										•					•			•		•
Sierra			•	•	•	•	•	•	•	•	•		•	•	•	•		•	•	•
Sonoma	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•		•	•	•
UNITE- LA		•	•				•	•			•	•	•	•		•	•	•	•	•
Ventura	•	•	•	•		•	•	•	•	•	•	•	•	•			•	•	•	
Verdugo		•	•			•	•	•	•		•	•	•	•		•	•	•		•
Vision 2020	•	•	•	•		•	•	•	•	•	•	•	•	•		•	•	•	•	•

Source: Survey of high school seniors in CORE LPs

Notes

Key STC participation measures:

A) Number of career awareness activities
B) Number of career exploration activities
C) Student-defined career-focused curriculum (i.e., students report on Senior Survey that they participated in a career academy, career major/pathway or Tech Prep)
D) Combination awareness/exploration/student-defined career-focused curriculum
E) School-reported career-focused curriculum (i.e., schools classified students as having participated in a career academy, career major/pathway, or Tech Prep; these students are classified as "high involvement")

• = statistically significant at the $p \leq .05$ level, and effects are linear

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Participation in STC helps students know what their schools offer and appreciate the value of the curriculum's focus on career guidance.

- According to the Senior Survey data, in 12 of the 13 LPs, students with more extensive involvement in STC generally were more likely to
  - believe that school has prepared them for employment right after high school;
  - feel that they had learned the skills necessary for the careers they are considering;
  - believe that their schools had provided useful career guidance; and
  - know the career-related activities available to them in school.

Career exploration activities and participation in a career-focused curriculum show important positive effects on students' attitudes about school.

- In nearly all of the LPs, students who participated more intensively in *career exploration* activities (such as internships or mentoring) or were in a *student*-defined career-focused curriculum, showed positive attitudes toward their education experience. There is also evidence that in most of the LPs, following a *student*-defined career-focused curriculum was associated with more positive attitudes than participating only in career awareness or career exploration activities. However, positive relationships between following a *school*-reported, career-focused curriculum and these attitudes were more sporadic.

We felt that this difference, which appeared in several of the analyses reported here, warranted further attention. A thorough examination of the data suggests that some students classified themselves as participants in a career-focused curriculum not because they were in a career major/pathway, Tech Prep, or an academy, but because they had completed a career-technical sequence. This was not part of the school definition of a career-focused program (see Appendix A regarding classification of students in Senior Survey sample). Consequently, these findings suggest that completing a sequence of career-technical courses may be an important, independent factor driving some of the positive attitudes that students have about their educational experience.

One of the most consistent findings in this study was the positive effect of student-defined participation in a career-focused curriculum on students' knowledge about the career-related activities available to them in their schools.

- Teachers and administrators in these programs have apparently done a very good job of letting students know that career development activities are a key part of the high school experience.

More intensive STC participation had fairly frequent positive effects on the percentage of students who felt that school prepared them for good jobs immediately after high school.

- On the one hand, overall percentages of students (both "high involvement" STC participants and "others") who believed that school prepared them for employment immediately after high school were typically very low. They ranged from 14% of seniors surveyed by the Sonoma LP to 23% at North Coast. (See Appendix D.) However, in 12 of the 13 LPs, a higher percentage of students who participated in student-defined career-focused curriculum indicated that they felt prepared for work right after high school when compared to students as a whole. None of these figures ever reached very high levels, but in some LPs the percentages of students in student-defined career-focused curricula who felt prepared for work right after high school were as high as 45%. In this instance, completing a career-technical sequence may be contributing to more positive student attitudes about their preparation for immediate employment.

All types of STC activities—career awareness, exploration, and career-focused curricula—frequently enhanced students' beliefs that their schools had provided opportunities to learn the skills that were necessary for career success.

- The effects of participating in larger numbers of career awareness or exploration activities, belonging to an academy, major/pathway, or Tech Prep program, or taking a career-technical sequence were often very large. (See Appendix D.) For example, at Partnership for Tomorrow, 41% of students with no career exposure activities felt they had been given these learning opportunities, while 62% of students with two or three exploration activities felt that way. Similarly, at Sierra, 30% of students with no career exploration activities felt that their schools had given them opportunities to learn skills needed for success, while 57% of students with three of these activities felt that way. At North Coast, only 30% of students who were not in a career-focused curriculum believed their school provided these opportunities, while 51% of students in career-focused curricula expressed the same positive attitudes.

Participating in STC activities led students to respond that their schools had provided useful guidance about choosing a career.

- In every LP in the study, a mix of career awareness and exploration activities and participation in career-focused curricula had positive effects on these attitudes. In all but two of the LPs, participation in larger numbers of career awareness and career exploration activities translated into more positive attitudes about the career guidance function at schools. In addition, students who enrolled in student-defined, career-focused curricula typically had more positive views about the career guidance activities at their schools than students who participated only in career awareness or career exploration activities.

How Does STC Affect Students' Confidence About Their Preparation for the Future?

One of the key objectives of STC efforts is to help students begin sorting through a wide array of career choices and start making sound, education-related decisions that will help them progress toward their career goals. Effective STC programs help students identify and understand the academic and technical skills they will need to acquire in high school and beyond and the kinds of education and training they will need to complete to achieve their career goals. Students who believe they have this knowledge should feel more confident that they are prepared to continue their education after high school and that they can reach their career goals.

STC Participation Helps Students Know How to Prepare for Successful Future Careers

Participating in STC appears to have generally positive consequences for helping students know the skills, education, and training that are needed for career success.

The major finding regarding the effects of STC on student confidence about their preparation for the future is that participating in STC appears to have generally positive consequences for helping students know the skills, education, and training that are needed for career success. This finding is supported by the data presented in Table 18. This table shows for each case study LP the statistically significant relationships between five measures of STC participation and the level of confidence of high school seniors regarding their educational preparation, knowledge of career prerequisites, and prospects for career goal attainment.

Table 18
Summary of statistically significant relationships between selected measures of preparation in STC activities and 2000-2001 California high school senior attitudes about postsecondary and career preparation, by type of STC participation measure and LP

	Student Confidence about Educational Preparation, Knowledge of Career Prerequisites and Career Goal Attainment																			
	I know skills needed for success					I know education and training needed for my career interests					I am confident I can reach my career goals					I am well prepared to continue my education				
Key STC participation measures	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
East Bay Learns	•	•	•	•		•	•	•			•		•			•				
LEED		•	•	•		•	•	•	•		•					•				
Monterey		•	•	•	•		•		•	•										
North Coast			•				•			•	•		•			•				•
P'ship for Tomorrow	•					•	•	•				•		•						
San Francisco							•				•		•			•	•			
San Luis Obispo	•		•	•					•		•			•						
Sierra			•	•	•															
Sonoma	•	•	•	•		•	•	•	•											
Unite LA	•	•	•		•	•	•	•	•	•	•		•			•	•			
Ventura			•	•		•		•	•	•						•				
Verdugo								•												
Vision 2020		•	•	•	•	•	•	•	•							•				

Source: Survey of high school seniors in CORE LPs

Notes

Key STC participation measures:

A) Number of career awareness activities

B) Number of career exploration activities

C) Student-defined career-focused curriculum (i.e., students report on Senior Survey that they participated in a career academy, career major/pathway or Tech Prep)

D) Combination awareness/exploration/student-defined career-focused curriculum

E) School-reported career-focused curriculum (i.e., schools classified students as having participated in a career academy, career major/pathway, or Tech Prep; these students are classified as "high involvement")

• = statistically significant at the p ≤ .05 level, and effects are linear

Even participating in lower-intensity career awareness activities can have positive effects on students' confidence about their preparation for future careers.

- In several of the LPs, students who engaged in larger numbers of career awareness activities more frequently indicated that they knew the skills, education, and training needed for career success. Specifically, in 5 of the 13 LPs, students who participated in larger numbers of career awareness activities were more likely to indicate that they knew the skills needed to be successful in the careers they were considering. In 7 LPs, students with greater participation in career awareness also responded that they knew the education or training needed for these career possibilities.
- Participating in a *student*-defined career-focused curriculum (which, as we indicated earlier, probably includes career-technical sequences, as well as academies, majors/pathways, or Tech Prep) is also positively associated with

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knowledge of needed skills, education, and training. In 10 of the 13 LPs we observed these positive associations.

- However, similar positive results were much less frequent for students in *school*-reported career-focused curricula, which include only academies, majors/pathways, and Tech Prep. Only 4 LPs in this study demonstrated these positive results.

One unexpected finding from the study was the lack of a clear association between STC participation and students' confidence about reaching their career goals or their beliefs that they were well prepared to continue their education. Specifically, the intensity of students' participation in various STC activities only occasionally translated into greater confidence about their future career success. Even more rarely did students with more intense participation in STC express greater confidence that they were well prepared to continue their education.

Two factors may be operating to dampen a positive influence of STC participation on students' attitudes about the future. First, across all of the LPs, large proportions of students demonstrated confidence about reaching their career goals whether they participated in STC or not. These figures ranged from 69 to 87 percent, and only 4 LPs displayed figures below 80 percent. In addition, in 11 of the 13 LPs, between two-thirds and three-quarters of students indicated that they felt well prepared to continue their education (see Appendix D). These highly positive student attitudes about the future leave relatively limited room for STC participation to have additional positive effects in many LPs in the study.

Second, while most students feel confident about the future and believe they are well prepared to continue their education, participating in STC may actually have a negative effect on these attitudes for some students. In particular, media sources, educators, and many parents are communicating the message that California students who score poorly on standardized tests are not prepared for postsecondary education and future careers. Some students may be internalizing this message and loosing confidence about the future. Participating in STC may heighten these concerns because effective STC programs show students how important it is to do well in high school and to get a good postsecondary education.

RELATIONSHIPS BETWEEN STC PARTICIPATION AND BEHAVIORAL OUTCOMES

In this section of our report, we focus on the student outcomes that are closer to the center of the target shown earlier in this chapter. Specifically, we describe study findings about the connections between participating in STC activities and engagement in high school, pursuing postsecondary education, and being successful in early employment. Based on data from the Senior Surveys, the Follow-Up Surveys, and information from students' academic records collected as part of the PLUS evaluations, we examine relationships between the intensity of involvement in several types of STC activities and the following student outcomes:

- engagement in learning, reflected in attitudes, course-taking patterns, and attendance;

- academic performance, reflected in grades and test scores;
- enrollment in postsecondary education; and
- early employment experiences.

How Does STC Influence Student Engagement in School?

For a wide variety of reasons, many of today's students are disengaged from school and fail to understand why school is important for their future success.[34] Lack of supportive parental attitudes, negative peer influences, and low expectations for achievement from teachers are only a few of the factors that lead to student disengagement from school. When California education leaders adopted the STC approach they aimed to shift this equation by increasing students' interest in school and their engagement in learning. In this section, we examine the relationship between STC participation and students' engagement in the learning process. The analyses address several questions: Do students believe that participating in STC activities has made school interesting and meaningful? Has it helped them understand why doing well in school is important? Is greater participation in STC activities associated with lower absenteeism, which is a key indicator of student engagement in school? The analyses presented below combine findings from the 13 LPs that participated in the CORE study and from additional data contributed by the PLUS studies in 5 of the LPs to address these questions.

STC Has Important Positive Effects on Students' Engagement in School

One of the major findings of this study is that students generally report that STC activities have made school more interesting and helped them understand the importance of excelling in their studies. Our data also indicate that these attitudes are significantly more positive among students who have had more intensive STC involvement.

This overall finding is supported by the data provided in Table 19. This table shows for each case study LP the statistically significant relationships between five measures of STC participation and high school seniors' attitudes reflecting their engagement in school. With the exception of participation in *school*-reported career-focused curricula, all of the other STC participation measures very frequently have positive effects on two important attitudes that express student engagement in school. Interestingly, even simply participating in larger numbers of career awareness activities appears to positively influence these attitudes.

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[34] L. Steinberg, *Beyond the Classroom*, 1996.

Table 19

Summary of statistically significant relationships between selected measures of participation in STC activities and 2000-2001 California high school senior attitudes related to engagement in school, by type of STC participation measure and LP

	Student Attitudes Reflecting Engagement in School									
	Doing well in school is important					STC makes school more meaningful and interesting				
Key STC participation measures	A	B	C	D	E	A	B	C	D	E
East Bay Learns	•		•	•		•	•	•	•	•
LEED	•	•	•	•	•	•	•	•	•	•
Monterey	•	•	•	•		•	•	•	•	
North Coast			•	•		•		•	•	
P'ship for Tomorrow	•	•	•	•	•	•	•	•	•	•
San Francisco	•	•	•	•	•	•	•	•		
San Luis Obispo	•		•	•		•	•	•	•	
Sierra	•		•	•	•		•	•	•	•
Sonoma	•	•	•	•		•	•	•	•	
Unite LA		•	•	•		•	•	•	•	
Ventura	•	•	•	•		•	•	•	•	
Verdugo	•	•	•	•				•		
Vision 2020	•	•	•	•		•	•	•	•	•

Source: Survey of high school seniors in CORE LPs

Notes

Key STC participation measures:

A) Number of career awareness activities

B) Number of career exploration activities

C) Student-defined career-focused curriculum (i.e., students report on Senior Survey that they participated in a career academy, career major/pathway or Tech Prep)

D) Combination awareness/exploration/student-defined career-focused curriculum

E) School-reported career-focused curriculum (i.e., schools classified students as having participated in a career academy, career major/pathway, or Tech Prep; these students are classified as "high involvement")

• = statistically significant at the p ≤ .05 level, and effects are linear

Students in this study displayed generally positive attitudes about the role of STC activities in helping them understand why doing well in school is important.

- In virtually every LP, students who have had more intense STC experiences (i.e., larger numbers of career awareness activities or participation in career exploration or career-focused curricula) were much more likely to believe that STC helped them understand the importance of doing well in school.

Career awareness activities can play an important role in helping students see the value of high academic achievement.

- Data from this evaluation show that as students participate in larger numbers of career awareness activities, they express more positive attitudes about the importance of doing well in school. For example, based on our analyses (not presented in tabular form), we observed that in Sonoma, 42% of students who had participated in one career awareness activity felt that STC had helped them understand the importance of doing well in school, while 83% of students who had participated in three career awareness activities felt that way. Similarly, in San Francisco, 68% of students who had participated in one career awareness activity felt that STC had helped them see the importance of doing well in school, compared to 87% of students who had participated in three career awareness activities.

Attitudes about school represent one way of looking at how STC may affect students' engagement in learning. Another approach is to explore the relationship between STC participation and attendance. Many students demonstrate their lack of interest in school and lack of understanding about its importance by simply failing to attend. Three of the LPs conducting PLUS studies examined whether implementing STC activities affected students' attendance patterns.

Findings from the PLUS studies indicate that STC participation can have positive effects on student attendance.

- In 2 of the 3 sites where the PLUS analyses addressed this relationship (San Francisco and Partnership for Tomorrow), students who participated in a career-focused curriculum had better 12th grade attendance than their peers. Within these two LPs, other measures of STC involvement were also positively associated with higher attendance in both the 11th and 12th grades.

Unfortunately, this evaluation was not able to explore statistical relationships involving student participation in STC activities, engagement in learning, and retention in high school. Ultimately, this causal connection is critical for evaluating the long-term benefits of STC programs, because we would anticipate that students who are more engaged in learning should be less likely to drop out. However, none of the LPs were able to examine high school dropout rates because reliable data are not available at the level of individual schools or for the state as a whole. Nevertheless, we believe that the findings from this study show potential promise concerning how STC participation may reduce dropout rates, because they demonstrate the effects of STC on engagement in the learning process. Further research exploring these connections should be undertaken.

Few Systematic Postsecondary Effects Associated With STC are Evident in this Study

One of the premises of STC implementation is that more intensive participation in STC activities will increase students' propensity to pursue further education after high school and improve their competitiveness in the labor market if they immediately look for employment. However, we also cautioned that, unlike attitudes or even school attendance, these behavioral outcomes are less amenable to change through a short-term intervention that touches the lives of students in limited ways (e.g., career awareness) or changes the school curriculum only in the last two years of high school (e.g., career exploration or a career-focused curriculum). With this caveat in mind, what did we learn about the possible effects of various STC activities on the following behavioral outcomes: academic achievement in high school, academic preparation for postsecondary education, transitions to postsecondary education, and experiences in the labor market?

Not surprisingly, the results of this study show there were few systematic postsecondary effects associated with participation in STC activities after controlling for student background characteristics such as parents' education, race/ethnicity, and gender, and a measure of prior academic achievement.

The outcome measures examined in these multivariate models included academic achievement in high school (standardized test scores [SAT-9] and cumulative grade point average); preparation for postsecondary education (satisfying the University of California A-G admissions requirements); enrollment in postsecondary education; and employment after graduation (months required to find a job and whether jobs included benefits or not).

Since the PLUS analyses did not use standard measures across LPs, there were some LPs where positive effects were found using models with variables specific to that LP, or that analyzed outcomes separately for some groups. These are described below.

STC Participation Did Not Have an Impact on Standardized Test Scores

- There were no statistically significant, consistent associations between any of the STC measures and 11th grade SAT-9 scores across the three PLUS LPs. Different STC measures sometimes had positive effects in one LP and negative effects in another. Although some STC measures appeared to have positive effects on standardized test scores within a particular LP, these effects were not consistently statistically significant.
- The lack of consistent effects and the varied degree of statistical significance was also found in the two LPs that were able to link Senior Survey data to the student outcomes. Using different multivariate models, in UNITE-LA participation in career academies had no effect on SAT-9 scores, while in Verdugo, participation in a magnet science and math high school had positive effects on math scores but not science scores.

STC Participation Did Not Have an Impact on Cumulative Grade Point Average (GPA)

- There were no consistent statistically significant effects of any STC participation measure on GPAs across LPs, nor were the effects of specific STC measures consistently positive within LPs. That is, the PLUS analyses revealed isolated positive effects of a few STC measures on GPAs, but these were too sporadic to indicate any reliable relationships.

STC Participation Has a Positive Effect on Preparation for Postsecondary Education

- Two of the 3 PLUS LPs (Verdugo and UNITE-LA) obtained information about whether a student met the A-G requirements. In both of these LPs, students who self-reported participation in a career-focused curriculum had a greater likelihood of fulfilling the A-G requirement compared to those who did not report participation, although the effect was statistically significant in only one of the two sites. Specifically, data from the Verdugo analysis, which used a passing grade in Algebra II as a proxy for postsecondary preparation, showed a positive effect of participation in a high-intensity STC program, while data from UNITE-LA showed positive effects of participation in a career academy on the likelihood of passing Algebra II for one of the two cohorts.

STC Participation Did Not Have an Impact on Postsecondary Enrollment

- There were no systematic positive effects of STC across LPs on enrollment in postsecondary education immediately after high school graduation, nor were there consistent and statistically significant effects of different STC measures within specific LPs.

STC Participation Did Not Have an Impact on Employment

- There were no consistent and statistically significant effects of STC on the likelihood of a student being employed full-time across LPs. Within LPs, there were few consistent positive effects on the odds of full-time employment among the different measures of STC involvement.

STC Does Not Have a Negative Impact on Academic Achievement or Postsecondary Enrollment

Finally, it is important to note that based on findings from the PLUS analyses, STC participation did not have negative effects on students' academic achievement in high school or on postsecondary outcomes.

Some critics of STC have argued against implementing STC-type school reforms by suggesting that participating in STC activities will detract from a focus on academics or negatively affect postsecondary educational attendance. The PLUS analysis conducted for this evaluation did not show these negative consequences.

CHAPTER VII
SUSTAINABILITY OF SCHOOL-TO-CAREER EFFORTS

The fourth and final research question posed at the onset of this evaluation study is: ***Have STC principles penetrated the community deeply enough to be sustainable?*** The question of sustainability is an important bottom-line issue for the evaluation of any substantive education or workforce preparation reform initiative. However, sustainability is a particularly salient issue for STC efforts, given the vision of STC as encompassing *long-term* structural change and system building.

Given the limited time frame and resources of the national and state STC movement, it would be unrealistic to expect that the systemic changes envisioned for STC would be completed at this time. Nonetheless, it is important to examine the progress made to date by California LPs in the direction of sustainable systems. In this chapter, we address the issue of sustainability using data from both case study and non-case study LPs. In order to answer the overarching sustainability research question (i.e., Have STC principles penetrated the community deeply enough to be sustainable?), we have organized discussion around three more specific questions:

1. What are LPs doing to sustain STC and what could they be doing to improve some of these efforts?
2. How extensive are sustainability efforts?
3. What does LP data suggest about systemic changes and the future sustainability of STC?

WHAT ARE LPS DOING TO SUSTAIN STC?

Data from both case study LPs and non-case study LPs suggest that LPs are pursuing a wide variety of strategies to sustain STC activities. Generally speaking, these strategies fall into six broad categories:

- building support for STC and competence in STC implementation;
- recruiting business partners and establishing solid working relationships between schools and employers;
- making *programmatic* changes at the school/district level that support STC implementation;
- making *structural* changes at the school/district level that support STC implementation;
- developing alternative sources of funding for STC efforts; and
- being selective about which STC efforts to sustain.

Examples of specific sustainability strategies within these broad categories are summarized in Box VII below and then discussed briefly. In many cases, activities that LPs identify as efforts to sustain STC (e.g., establishing relationships between schools and employers, developing or expanding career academies and majors/pathways, communicating regularly with key stakeholders, providing professional development) are the same as their key STC implementation activities. This suggests that LPs view such activities as both integral features of STC and necessary steps in building a foundation for a lasting STC system.

Box VII
Examples of LP strategies for sustaining STC

Building support for STC and competence in STC implementation among key stakeholders

- Communicating regularly with key stakeholders about STC
- Providing STC-related professional development opportunities and resource materials to key stakeholders (e.g., teachers, administrators, employers)

Recruiting multiple business partners and building solid working relationships between schools and employers

- Forming business in education organizations or committees responsible for recruiting business partners and linking them with schools
- Forming industry-specific learning collaboratives (i.e., networks of educators and business/industry representatives who work together to plan and implement STC efforts and share best practices)
- Making an LP staff person and/or district and school STC coordinators responsible for building and managing connections between schools and employers
- Inviting employers to participate on STC governing and advisory bodies
- Creating databases with directories of employers and available work-based positions, as well as interactive links to other career-related sites or other educational institutions

Making programmatic changes that support the implementation of STC

- Creating and/or expanding career academies and majors/pathways
- Purchasing STC-related materials and equipment for classrooms, libraries, and career centers (e.g., career assessment software, books that describe different careers, computers)

Making structural changes that support the implementation of STC

- Developing alternative scheduling (e.g., block scheduling) to accommodate WBL
- Restructuring teacher schedules to allow for collaboration and team-teaching
- Building STC into required curriculum and/or graduation requirements
- Designating STC coordinators at the school and/or district levels to promote STC and oversee STC implementation (including forming and nurturing relationships with business partners)

Finding alternative sources of funding for STC efforts

- Transferring financial (and coordination) responsibility for various STC activities from the LP to county offices of education, school districts, and schools
- Partnering with CBOs, postsecondary institutions, and various educational and workforce development programs to leverage existing resources (e.g., ROP, Tech Prep, WIA youth activities) to support STC efforts
- Applying for grants to support implementation of STC

Being selective about which STC efforts to sustain

- Using remaining STC seed funding to 1) identify those STC activities, practices, and/or programs that show the most promise of "lasting into the future" and 2) find ways to sustain those activities, practices, and/or programs

Building Support for STC and Competence in STC Implementation

LPs have spent substantial amounts of time and money attempting to generate support from key stakeholders and prepare them for involvement in STC implementation. Most LP work in this arena has focused on educating key stakeholders about STC (what it is and why it is valuable) and communicating regularly with these stakeholders about STC efforts. The general belief seems to be that committed, informed, and competent stakeholders are a necessary ingredient for sustaining STC over time. Professional development, especially for teachers, and communication based on several media sources have been central to achieving stakeholder participation.

Providing Professional Development

Data from both the final reports submitted by the case study LPs and phone interviews with non-case study LP directors indicate that most, if not all, **LPs see professional development as a key strategy for sustaining STC efforts over time**. In large part, LP directors believe that professional development is necessary to deepen stakeholders' understanding of and commitment to STC and to equip them with the specific knowledge and skills needed to implement various STC activities and efforts, including activities such as curriculum integration, career counseling, job shadowing, mentoring, internships, and even grant writing, which will help stakeholders generate funding to continue STC efforts. The expectation is that once stakeholders, especially teachers, learn STC-related skills, they will make good use of them over time.

While most, if not all, LPs report offering STC-related professional development, it is not clear how many teachers have actually participated in these efforts. It is also not clear whether those teachers who have participated have yet achieved the level of competence necessary to successfully implement various instructional strategies (e.g., curriculum integration) and activities related to STC. Findings from the LP case studies indicate that **many teachers generally support STC and see its value for students, but may not have in-depth knowledge of implementation practices**. It is highly likely that LPs will need additional funding to increase the scope and reach of STC-related professional development efforts so that teachers who have already received some training can continue to improve and refine their new skills, and so that new teachers can be introduced to STC concepts and practices. Educating teachers that even low-intensity (relatively easy to implement) career awareness activities can make a difference may be helpful. Assisting them to develop the knowledge and skills needed to connect career development goals and WBL to academic standards will be especially important in the current accountability-focused educational environment. Other promising professional development strategies mentioned by some LPs include: fully integrating STC concepts and practices into teacher preparation programs, and providing opportunities for teachers to meet in industry-specific groups to share best practices and ideas for overcoming challenges associated with STC implementation.

Communicating Regularly with Key Stakeholders

Many LPs have developed methods for communicating regularly with key stakeholders to update them on STC progress and share best practices and success stories, including STC newsletters, STC Web sites, and stories on local news programs and in local newspapers. Through their efforts at ongoing communication, **LPs strive to continually build and maintain support for STC by keeping it "visible" and attempting to show how it is valuable**. Strong support for

STC will be necessary for STC implementation to last, especially within an educational environment in the state that is heavily focused on academic standards and accountability. The challenge will be for LPs to find ways to communicate the STC message with limited funding.

While it is clear that many LPs have made a concerted effort to communicate with key stakeholders about STC, data from interviews with employers and labor organization representatives suggest that there is room for improvement. **Some employers complain that schools don't keep them fully apprised of STC efforts and activities** (e.g., the different types of STC activities they can participate in, when and where various STC activities are taking place), and many admit that they get little information from schools related to the impact of WBL experiences on students' performance at school. Some employers indicate that they would like to participate more actively in STC, but they require more and better information about how to contribute.

Recruiting Business Partners and Building Solid Working Relationships Between Schools and Employers

Many LPs and some individual schools within those LPs have made it a priority to recruit business partners, link them to schools, and nurture the development of productive working relationships between educators and employers. And, some are now working to streamline the processes they use to solicit and manage employer involvement to make them as efficient and effective as possible. Behind these efforts is the recognition of the very important role that employers play in STC (e.g., relating expectations and demands of the workplace to educators, participating in curriculum development, providing career awareness and exploration activities for students and teachers), and the belief that strong working relationships between schools and employers, once established, are likely to last over time, even after an LP's STC seed money is gone. The hope is that once educators and employers learn to work together and realize the benefits of their collaborative efforts, they will want to continue those efforts over time and will help find ways to do so. So far, LPs' efforts seem to be paying off. As described in an earlier section, **employer involvement in STC is becoming fairly common across the state**, and once employers are engaged in STC, they typically want to continue participating and frequently plan to increase their involvement.

While many LPs appear confident that the future for employer involvement is promising, they admit that it will be difficult, without additional resources, to nurture existing relationships between schools and employers, form new relationships, and maintain resources designed to facilitate business/education collaboration (e.g., employer databases). As a result, many **LPs are working to secure additional resources to put toward soliciting and managing employer involvement**. Specifically, they are seeking ways to continue funding key STC staff at the LP, district, and/or school levels responsible for forging and managing connections with employers (e.g., LP-level WBL specialists, LP-level business liaisons, district or school STC coordinators). Those LPs that are not yet pursuing this strategy may want to give it serious thought.

LPs and schools may also want to consider taking more active steps to increase the involvement of labor organizations in STC efforts. As mentioned previously, **only a very modest level of involvement by labor organizations was observed in most STC activities**. This may result from communication lapses, as well as the fact that labor organizations appear to underestimate the contribution they can make through low-intensity career awareness activities. Instead, they appear to focus too heavily on the importance of hands-on WBL where students under 18 years of age encounter limitations due to OSHA restrictions.

Making Programmatic Changes at the School Level that Support STC Implementation

Many LPs have focused part of their funding and energy on helping some schools to develop or expand career academies and/or majors/pathways. Several LPs are involved in efforts to expand ROP courses and majors/pathways to better meet the needs of college-bound students. Moreover, at least one LP is advocating loosening California Partnership Academy funding requirements to allow for more diverse student enrollment in this type of academy.

LPs cite several different reasons for pursuing academy and pathway development as a key sustainability strategy. For example, some believe that these programs, once well established, become part of the fabric of schools and are therefore likely to last. Academies, especially, provide a way to institutionalize a comprehensive STC experience for students that can include an integrated curriculum, team teaching, interdisciplinary coursework, and WBL. In addition, career academies have been receiving positive attention due in part to their small learning community structure, which many educators believe is beneficial to students, and their capacity to expose students to career-related coursework and WBL without reducing their exposure to core academic courses. This positive attention may make it easier to solicit and maintain support for academies. Finally, some LPs have seen the development and expansion of California Partnership Academies and ROP majors/pathways as promising because these efforts allow LPs and schools to leverage other existing sources of funding. Obviously, maintenance or discontinuance of these other funding sources could be important in determining the future of pathway and academy efforts.

Making STC-related programmatic changes also entails purchasing STC-related materials and equipment. Many LPs and schools (who received STC mini-grants from LPs) used some of their STC funds to purchase career-related materials and equipment (e.g., career assessment software, books that describe different careers, computers) for classrooms, libraries, and career centers. Some LP and school staff consider this a cost-effective strategy for sustaining STC because they believe the materials will be available for use indefinitely and will not require ongoing expenditures. Interestingly, there are staff in other LPs and schools who do not believe that purchasing materials and equipment (in the absence of making related programmatic changes) is a sound sustainability strategy. They suggest that many materials and equipment (e.g., software and computers) can become outdated or even obsolete relatively quickly in this day and age.

Making Structural Changes at the School/District Level that Support STC Implementation

Schools and districts within LPs are making various structural changes to support the implementation of STC. Three of the more common structural changes—restructuring teacher and school schedules, building STC into graduation requirements, and designating STC coordinators at the district or school level—are described briefly below.

Restructuring Teacher and School Schedules

LPs report that some schools have restructured teachers' schedules to allow more time for collaboration and team teaching, especially between career-technical and academic teachers, and developed alternative scheduling (e.g., block scheduling) to create more time for contextual, project-based instruction and WBL.

Building STC into Graduation Requirements

Some schools and districts, though not a lot, have attempted to build STC into required curriculum and/or graduation requirements. By doing so, they hope to encourage key stakeholders to see STC implementation as a priority and to ensure that students engage in at least some career-related learning before leaving high school.

Designating STC Coordinators at the District or School Level

Many LPs have designated STC coordinators at the district and/or school level. According to many LP directors, these STC coordinators are essential to promoting STC and coordinating implementation efforts within schools. They are especially essential in facilitating STC-related communication among school staff and between schools and their various STC partners (e.g., employers, postsecondary institutions, community-based organizations). Without them, it would be very easy for STC to slip through the cracks in many schools. Because many LPs recognize the critical role that STC coordinators play in keeping STC alive within schools/districts, they are making a concerted effort to secure alternate funding to continue paying for STC coordinator positions before seed funding runs out. Several LP directors report that districts are now paying for STC coordinators to continue what is perceived as a valuable function.

Finding Alternative Resources of Funding for STC Efforts

With the end of federal funding for STC, developing alternative funding sources has become one of the most important aspects of sustainability efforts. While data from the high school Administrator Survey indicate that relatively low percentages of high schools are themselves developing alternative sources of funding to sustain STC activities (see Table 20 later in this section), efforts to develop alternate sources of funding for various STC activities appear to be a priority at the LP level. **LP directors agree that securing additional resources is perhaps the most crucial prerequisite for sustaining STC**. In fact, many LPs will not be able to fully implement other sustainability strategies—such as expanding teacher professional development opportunities and business/education collaborations—without first securing additional STC funding. As a result, LP board members and staff within many LPs are actively looking for alternative sources of funding. While some LPs began looking for additional funding very early in their STC seed funding cycle, others are just now (as their seed money runs out) getting serious about looking for new ways to pay for STC activities. They are looking to school districts, county offices of education, other educational and workplace development programs (e.g., ROP, Tech Prep, WIA), the state and federal government, business partners, foundations, and a host of CBOs that serve youth for financial support.

Generally speaking, LPs' efforts to develop alternative funding fall into three broad categories:

- transferring financial (and in some cases coordination) responsibility for various STC activities from the LP to county offices of education, school districts, and schools;
- partnering with CBOs, postsecondary institutions, and various educational and workforce development programs to leverage existing resources (e.g., ROP, Tech Prep, WIA) to support STC efforts; and
- applying for grants to support implementation of STC.

It is important to note that **many LPs see the second of these alternative funding strategies, partnering with other organizations and programs, as particularly promising** for several reasons. First, it encourages collaboration among key stakeholders who share a common interest in helping students to reach high academic and occupational standards and prepare for further education and careers. Research on STC suggests that this type of collaboration is essential to the success of STC. In addition, some believe that the funding available through partnering with well established organizations and programs is more secure over time than the often temporary money obtained through grant writing.

Also promising is funding now being made available to California STC LPs by the State through AB 1873. Administered by the Secretary of Education's Office, AB 1873 funding is awarded to successful STC LPs through a competitive grant process. Such funding allows LPs to build upon and strengthen their STC activities. It further encompasses STC sustainability by requiring that LPs have a plan for attracting other sources of revenue from the nonprofit and private sectors necessary to the ongoing support of STC. The first round of AB 1873 was $2 million. Three LPs—East San Gabriel, Orange County's Vision 2020, and San Diego Workforce Partnership—received $500,000 for one year (starting in March 2001 and ending in September 2002 with a no-cost extension). In addition, several $75,000 grants were awarded to support best practices.

Some specific examples of LPs' efforts to find alternative ways to fund STC efforts are provided in Box VIII below.

Box VIII
Examples of successful efforts to find alternative funding for STC activities

- In a number of LPs, school districts have assumed responsibility for funding STC coordinator/liaison positions. In LA (Compton), a school district has taken over responsibility for the LP's internship program. District staff persons are actively forming partnerships with businesses and the number of internships available to students is on the rise. A school district in LA (Antelope Valley) is considering paying for summer professional development institutes related to STC. In an LP in Solano County, district funds are being used to match partnership academy money and to pay for field trip transportation.
- In several LPs, high school career center staff have taken over responsibility for implementing job shadowing. In San Benito, the junior high/middle schools have taken over responsibility for coordinating (but not yet paying for) their career speaker programs. Next year, the elementary schools within the same LP will take over responsibility for coordinating their career fairs. The LP is actively working to get businesses to sponsor the career fairs and guest speaker program.

- In Fresno, an economic development organization called I-5 has committed to sponsoring a large career fair for the LP, a $15,000 per year commitment. In an LP in Solano County, an economic development organization known as SEDcorp has agreed to coordinate the LP's *Teacher in the Workplace* program and to play a larger role in coordinating the county science fair. In the same LP, the Vallejo Chamber of Commerce has agreed to organize 10 student internships. An LP in Santa Clara County partners with Junior Achievement to organize and implement Groundhog Job Shadow Day.
- A number of LPs report using ROP as a vehicle for delivering career-related content and work-based training. For example, a number of LPs report that schools have incorporated ROP classes into their academy programs. One LP has worked closely with ROPs to increase the number of work-based training classes available to students. In addition, ROP coordinators have been helpful (in at least one LP) in disseminating STC information and materials through the ROC/P networks and helping to establish synergy between career-technical programs and LP STC efforts.
- An LP in West Contra Costa County brings academic and career-technical teachers together to work on cross-disciplinary curriculum planning projects. These efforts have been funded with Carl Perkins (career-technical education) funds. The LP also receives some funding from Tech Prep (through Contra Costa College), Special Education, WIA, and Extended Day funds that can be applied toward STC.
- In LA (East San Gabriel), a local community college has taken over responsibility for the LP's internship program. In another LP, a community college is now responsible for organizing and implementing Groundhog Job Shadow Day. In yet another LP, a local community college now organizes a major career fair in the area. An LP in Santa Clara County has forged partnerships with several local colleges that have engineering and manufacturing grants that can be used to help fund some of the LP's STC efforts related to those industries.
- An LP in Santa Clara County has worked diligently from year 1 to secure additional grants to fund STC activities. They currently have a $200,000 grant from NASDAQ for STC efforts related to the financial services industry, $200,000 from the Knight Foundation for STC-related activities to the information technology industry, and $200,000 a year for the next two years from the city of San Jose's anti-tobacco money. An LP in Marin County recently received $1.2 million from the Marin Community Foundation. An LP in San Mateo County recently received $15,000 from the Peninsula Community Foundation and $10,000 from WEBcore. An LP in Fresno is currently applying for one of the Governor's 15% grants for workforce investment. Some if not all of the money, if received, will be put toward continued development of a training center (similar to an ROC) to serve schools in the four districts that are part of the LP. A construction academy at a school within one LP received a $400,000 grant to help build low-income housing in the area.

Being Selective About Which STC Efforts to Sustain

As LPs' seed funding runs out, a number of LP directors admit that it will not be possible to sustain all STC activities and programs. As a result, these **directors are working to identify those STC activities, practices, and/or programs that show the most promise of "lasting into the future"** (e.g., those that have worked well or taken hold) and to find ways to sustain those efforts. For example, the original STC plan for one LP called for career academies in every high school. The LP now plans to focus its energy on strengthening the most successful of the academies and disbanding the others. The LP is applying for small learning community grants to help fund this work.

HOW EXTENSIVE ARE SUSTAINABILITY EFFORTS?

While a variety of strategies to sustain STC are being pursued within LPs across the state, implementation of these strategies is far from systemic. LPs expressed an understanding of the importance of sustainability efforts, but participation in these activities generally is not high. **Although all case study LPs are engaged in some activities aimed at sustaining STC, data from the high school Administrator Survey indicate that school-level efforts to sustain STC**

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are not widespread within the 13 case study LPs. As shown in Table 20 on the next page, each of the seven strategies for sustaining STC outlined in the high school Administrator Survey is being pursued by less than 50% (and in some cases much less than 50%) of high schools in most of the case study LPs. We only collected quantitative data for the seven strategies listed in Table 20, and not some of the other sustainability strategies discussed earlier in this section (e.g., communicating regularly with stakeholders, providing professional development, maintaining STC coordinators in districts/schools, being selective about which STC activities to sustain). However, qualitative data suggest these practices are being pursued as key strategies for sustaining STC within some LPs at the school and/or LP level.

Of the seven sustainability strategies listed in Table 20, establishing partnerships with businesses, labor organizations, and CBOs and creating or expanding career academies and majors/pathways are strategies that are being implemented by the most schools, followed by developing alternative sources of funding. Many LPs report that they believe these are among the most promising sustainability strategies. Qualitative data from phone interviews with non-case study LP directors suggest that efforts to develop alternative sources of funding may currently be more common at the LP level than at the individual school level. In addition to actively seeking new ways to pay for various STC activities, a number of LP directors report offering professional development opportunities designed to help STC coordinators and other school-level staff develop effective grant writing skills in the hope that they eventually will be able to help with fundraising efforts.

Building STC into graduation requirements appears to be the sustainability strategy being pursued by the fewest case study high schools. Implementing this strategy at a time when many schools are feeling pressure to cover academic standards and do well on state-mandated tests (which do not explicitly cover career-related content) is proving challenging. There are still many school administrators and academic teachers who are not convinced that involvement in STC will help improve students' academic performance.

Efforts to sustain STC vary from one LP to another (see Table 21), and there appear to be no distinct patterns in the key strategies being implemented to sustain STC across the 13 case study LPs based on school characteristics such as urbanicity, percent of students receiving free and reduced meals, percent of families in CALWORKS, and percent of minority students. Any differences that do exist seem to be unique to individual LPs and cannot be applied to LPs across the state. Perhaps different LPs implement different strategies for sustainability to different degrees, based on their own unique set of circumstances.

Table 20
Level of implementation of seven sustainability strategies
(Source = Administrator Survey: X.1.a)

Activity	Number of case study LPs that report that **50% or more** of high schools within their LPs are pursuing this activity as a key strategy for sustaining STC	Number of case study LPs that report that **less than 50%** of high schools within their LPs are pursuing this activity as a key strategy for sustaining STC
Developing alternative scheduling to accommodate WBL	1	12
Restructuring teacher schedules to allow for collaboration and team teaching	1	12
Establishing partnerships with businesses, labor, and community-based organizations	4	9
Creating or expanding career academies or majors/pathways	3	10
Developing alternative funding sources **within** school districts	2	11
Developing alternative funding sources **outside** school districts	1	12
Building STC activities into graduation requirements	0	13

Table 21
Percent of high schools in case study LPs pursuing various strategies to sustain STC
(Source = Administrator Survey: X.1.a)

Activity	EBL	LEED	MTRY	NC	PFT	SF	SLO	SNMA	SRA	ULA	VDGO	VTRA	V2020
N[35] =	62-65	41	15	15	27	10	9	8-9	19	34-36	7-9	23	45-48
Developing alternative scheduling to accommodate work-based learning	25% N=64	20%	20%	33%	30%	30%	56%	33% N=9	47%	18% N=34	13% N=8	26%	16% N=45
Restructuring teacher schedules to allow for collaboration and team teaching	28% N=65	24%	27%	27%	30%	50%	11%	11% N=9	32%	20% N=35	25% N=8	17%	22% N=46
Establishing partnerships with business, labor, and community organizations	19% N=64	34%	60%	33%	26%	70%	22%	11% N=9	53%	25% N=36	56% N=9	43%	35% N=46

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[35] Since a high number of LPs reported that the number of schools answering every question varied, the percentages for this table alone are based on the N for each question (activity). N= sum of schools that reported activity as a key practice and schools that reported limited or no implementation of the activity (based on data in Table Shell X.1.a).

Table 21 (continued)

Creating or expanding career academies, majors/pathways	17% N=64	32%	27%	13%	19%	70%	22%	13% N=8	21%	50% N=36	67% N=9	48%	25% N=48
Developing alternative funding sources **within** school districts	12% N=65	20%	40%	27%	15%	50%	11%	22% N=9	5%	29% N=35	67% N=9	48%	18% N=45
Developing alternative funding sources **outside** school districts	17% N=63	17%	27%	40%	19%	40%	11%	33% N=9	16%	34% N=35	50% N=8	43%	17% N=46
Building STC activities into graduation requirements	11% N=62	10%	33%	33%	15%	40%	33%	11% N=9	21%	24% N=34	14% N=7	17%	11% N=47

WHAT DOES LP DATA SUGGEST ABOUT PROGRESS TOWARDS SYSTEMIC CHANGE AND THE FUTURE SUSTAINABILITY OF STC?

This 2-½ year, statewide evaluation has generated considerable quantitative and qualitative data on STC. **Some aspects of STC appear to be firmly entrenched in the state's education system, while others remain isolated and touch the lives of relatively few students. Overall, there has been a clear shift toward making career awareness a key element of students' education experience at all education levels**. Career assessments and interest inventories, career-related guest speakers, and field trips to work sites are now fairly common in many schools across the state. Even job shadowing seems to be more common now than prior to the advent of the STC movement, though participation by students in this activity is often limited to the annual Groundhog Job Shadow event organized within many LPs. However, while students are offered many of these career awareness activities, they generally are not coordinated across educational levels in ways that build on what students learned and did at earlier stages. Even these low-intensity activities could have a greater impact on students if they were more systematic and better coordinated.

There is much less evidence that participation in career exploration (e.g., internships and apprenticeships) and meaningful career-focused curriculum (e.g., career academies and majors/pathways) have become part of most students' education. **While student participation in community service/service learning is relatively common, participation in other career exploration activities such as mentoring experiences, internships, and apprenticeships is relatively low in most schools**. And, while most LPs claim to have provided professional development opportunities related to curriculum integration, it is unlikely that a majority of K-12 students are exposed to meaningful integrated curriculum on a regular basis. Much of the most meaningful integration appears to be occurring in academy environments, which serve relatively low numbers of students.

Generally speaking, STC seems to have penetrated high schools more than elementary or junior high/middle schools. Even among high schools, however, there is great variation in the degree to which STC has been incorporated into the fabric of the education experiences provided by these schools. **While there are a few examples of schools that have made significant progress toward making STC systemic, the majority of schools do not seem to offer the range, depth, or combination of career awareness and exploration activities and career-focused curriculum needed to provide all students with a comprehensive STC experience**. Interestingly, there is little evidence that high implementation schools have been more successful than low implementation schools in making STC systemic.

The good news on this score is that **even low-intensity STC activities can have important payoffs for students' attitudes about and engagement in school**. With continued employer involvement and expanded labor participation, even more students could benefit.

Barriers to Systemic Change and Sustainability

A number of different factors are making it challenging for LPs to implement and sustain STC activities and programs. The most common, overarching barriers are discussed briefly below.

Limited Support for STC Among Some Key Stakeholders

It has been difficult to gain support for and commitment to STC from some administrators and teachers for a variety of reasons. Most importantly, these individuals perceive conflicts between STC and the demands imposed by the state's emphasis on testing and accountability. They also express differences of opinions about which students would benefit from STC and skepticism about educational reform efforts in general. **Many schools are feeling pressured to meet academic standards and to have students do well on state-mandated tests. With little or no hard evidence that involvement in STC improves academic performance, many administrators and academic teachers are hesitant to fully embrace STC**. While they feel that STC has some value, they see it as a distraction from academics. They are concerned that integrating practical or experiential learning into academic curriculum will detract from efforts to help students master traditionally defined academic skills that are important for doing well on standardized tests and attaining admission to college. For similar reasons, some administrators, teachers, and parents feel that STC is not relevant for college-bound students. Some schools that serve large populations of such students have been resistant to integrating STC activities into the educational programs they provide students. Some individuals (e.g., school counselors) fear that STC represents career-technical tracking and reject it accordingly. Some elementary school teachers and administrators feel that STC is not relevant for their student population. These teachers and administrators believe that elementary school students are too young to truly understand or benefit from many career development activities. Finally, after seeing many reforms come and go, some educators are hesitant to invest significant time and energy into STC because they believe it is simply another "program of the month" that will, like other reforms, disappear when seed funding sunsets.

Several non-case study LP directors comment on the significant amounts of time and money that LPs have had to invest attempting to get key stakeholders to buy in to STC. They point to the duplication of STC marketing efforts across LPs as inefficient and say it would be helpful for the State to assume a larger role in "selling" STC statewide, both to maximize resources and to send a stronger message to the field that STC is an important reform effort to embrace. Some LPs suggest that part of selling STC to key stakeholders is helping them see how STC strategies can be aligned to standards and assessments.

The positive findings from this evaluation concerning STC's influence on student attitudes and engagement in school should help more key stakeholders recognize the potential of the initiative. In addition, findings from this evaluation show that STC participation can enhance students' ability to complete rigorous academic courses. These results should be used to help diffuse some of the reservations on the part of academic teachers.

Turnover of Leadership at Various Levels

Turnover in leadership at the LP, district, and/or school levels has made gaining and maintaining momentum in STC implementation difficult for some LPs. More specifically, **lack of strong, consistent LP-level leadership within several non-case study LPs (due to turnover of LP directors) has interfered with development of a central vision to guide LP implementation efforts**, slowing their progress significantly. Leadership turnover at the district and school levels has been equally problematic for some LPs. LP staff have spent significant time and money marketing STC to district and school administrators because they know the support of these individuals is essential to STC implementation. Turnover of supportive district or school administrators makes it necessary to "re-sell" STC to their replacements, who may or may not be receptive. This requires the investment of additional time and money, leaving fewer resources for other valuable implementation efforts. And, if a new administrator is not receptive to STC, progress made in the school or district may slow or come to a halt.

Limited Time and Money

Issues of time and money have emerged as barriers to STC implementation on several different levels. **Overall, many LPs feel that four years has not been enough time to make sufficient headway in developing sustainable STC systems**. For some LPs, especially those that did not exist prior to STWOA, the process has felt rushed. These LPs feel that more time and seed money was needed to adequately plan their STC systems, refine and/or expand their efforts over time based on close examination of successful and unsuccessful activities and practices, and develop and firmly put in place strategies for sustaining STC. They feel that STC activities and programs need more time to firmly take hold (i.e., become more fully integrated into schools' culture and curricula) before money disappears. Also, they believe more time is needed to collect compelling evidence of the impact of STC on various student outcomes.

Several non-case study LP directors believe that limited time has been complicated by a funding structure that in their minds is "backward." According to these LP directors, the largest portion of STC funds was available early in the funding cycle when many LPs were primarily trying to build support for STC and plan their STC efforts, versus later when they were attempting to implement multiple activities and programs. They say that **generating the level of alternative funding now needed to strengthen and sustain the STC activities and programs in place will be very challenging**.

Limited personal time has made it difficult for some key stakeholders (especially teachers, employers, and students) to implement or participate in key STC-related activities. For example, most teachers have very limited time to attend professional development events and meet with other teachers (especially across departments) to plan and develop integrated curriculum. This appears to be most problematic for academic teachers who feel tremendous pressure to prepare students for standardized tests. A number of LPs report that it is difficult to make the most valuable forms of WBL opportunities (e.g., ongoing mentoring relationships, internships, apprenticeships) available to students due to the time and energy that teachers and employers must invest to organize, implement, and monitor these more intense STC activities. Students' limited time can also be a barrier to participation in STC. Some LPs state that college-bound students, who are busy fulfilling the rigorous academic requirements necessary for college admission, have very limited time to participate in elective classes and STC-related programs that would expose them to more intense STC experiences. Some LPs noted that the same may be true for students in English Language Development (ELD) programs who often have to spend their elective time in remedial classes designed to strengthen their language skills. In addition, new graduation requirements, which reduce the time students may spend taking electives, may result in fewer opportunities for students to engage in STC activities.

Lack of Teacher Knowledge About How to Implement STC Curriculum Elements

As mentioned in previous sections, while many teachers generally have positive attitudes about STC and some superficial knowledge about what STC is and how it can be valuable, it appears that they may still lack the concrete knowledge and skills needed to effectively plan and implement various STC-related activities and instructional practices, especially higher intensity activities and practices (e.g., integrating curriculum, team teaching, planning WBL activities and connecting them to curriculum). In addition, many high school teachers are not used to collaborating with other teachers, especially outside their program areas, due primarily to the compartmentalized structure (e.g., organized by departments) that still exists in many high schools. These factors may help explain why medium- and high-intensity STC activities are less widespread than more simple, easy-to-implement forms of career development activities.

Cumbersome, Time-Consuming Reporting Requirements

Several non-case study LP directors complain that the reporting requirements related to STC are cumbersome, time consuming, and often confusing. Furthermore, too many data collection requirements were introduced late, making tedious backtracking necessary. Some feel that the bureaucratic load associated with STC reporting interferes with LPs' efforts to implement STC activities and programs for students.

The Future of STC in California

In summary, the data suggest that a number of STC activities are likely to be sustained in some form within many of the LPs across the state. For example, **it is likely that low-intensity career awareness activities that are relatively easy and cost-effective to implement (e.g., career assessments, guest speakers in classrooms, field trips to work sites, Groundhog Job Shadow Day) will continue to be offered in many schools.** These activities have been adopted by many schools and school districts and do not necessarily depend on the continuing efforts of LPs. **The future of more intense STC activities and programs is less certain.** Increasing student participation in meaningful integrated curriculum and career exploration activities (e.g., internships, mentoring) and coordinating STC effectively across educational levels will require significant time and resources to achieve. And, unfortunately, telephone interviews with non-case study LP directors suggest that some LPs may not be able to sustain their work too far beyond their STWOA funding. The LPs in most jeopardy appear to be those that have struggled with repeated turnover of leadership at the LP level.

The findings of this evaluation study suggest that several key conditions are necessary to support sustainability of STC in California. These conditions are listed in Box IX below. LPs should be aware of these key conditions as they continue to build upon their STC successes.

Box IX
Key conditions necessary to support STC sustainability in California

- A shared vision among key stakeholder groups that STC is valuable for all students and can play a role in improving student performance.
- Strong and consistent leadership at the school, district, LP, and State levels, able to effectively communicate the STC vision and work diligently to create a place for STC among the State's educational priorities.
- Presence of structural elements that support STC implementation, including individuals or teams within districts and/or schools (e.g., STC coordinators) to champion STC and oversee implementation efforts, school and teacher schedules that support the development and implementation of meaningful career-focused curriculum and WBL opportunities, and curriculum and graduation requirements that include career-related components.
- Sufficient funding for continued implementation of key STC activities, including professional development, outreach to employers, WBL, operation of existing career academies (and development of new academies and majors/pathways if possible), and other meaningful curriculum integration efforts.

These conditions necessary to STC sustainability represent a tall order for LPs to achieve. Nonetheless, different kinds of support are now available to help LPs attain STC sustainability. As mentioned previously, *AB 1873* makes state funding available to help LPs build upon and expand STC activities and explore other sources of funding. This key legislation also incorporates STC into California's education code. Another source of support for STC sustainability is the development of "grass roots" and constituent networks dedicated to the success and sustainability of STC efforts. Examples include *CalSCAN* (California School-to-Career Action Network) and the *Association of California School Administrators/California County Superintendent's Educational Services Association STC Task Force*. Moreover, *California's school accountability report card* was amended in fall 2000 to include "the degree to which pupils are prepared to enter the workforce" (SB 1632). Finally, California's Master Plan recommends the "explicit infusion of a school-to-career concept in public schools, colleges, and universities to provide students with clear curricular and career guidance about the range of post high school options for which they can aspire."[36] Together, these and other sources of statewide support for STC sustainability provide a credible basis for options regarding the future sustainability of STC in California.

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[36] California Master Plan, July 2002 (Draft).

CHAPTER VIII
CONCLUDING REMARKS AND RECOMMENDATIONS

What do the major findings from this study say about the current landscape and future directions of STC in California? Offered below are the statewide evaluation team's overall conclusions based on the findings of the study and recommendations for sustaining and expanding the reach of STC in California.

CONCLUSIONS

At the onset of this statewide evaluation study, four research questions of interest were posed. We present our conclusions using these key questions as a frame for discussion.

What is the Status of STC Implementation in California?

In essence, the findings of this study demonstrate that some elements of STC are taking hold within and across LPs in all regions of the state on a fairly widespread, if variable, basis. California educators have recognized that all students, especially those from disadvantaged backgrounds, can benefit from learning about careers while in school. Background information from the case studies suggests that there is a broad range of LPs involved in STC, ranging in organizational complexity from 1 to 36 K-12 school districts, and from 29 to 580 schools. It is also clear that the goals and principles of STC were not new to many LPs at the time that they first received STWOA funding. Eight of 13 case study LPs were established before California received STWOA funding in 1998. Similar to what is happening in other parts of the nation, education agencies are the driving force behind STC in California, with education agencies serving as the lead organizations for 12 of the 13 case study LPs.

Across the state, it appears that some key features of STC are being implemented more readily than others. For example, although the integration of academic and career-technical curriculum is considered a hallmark of STC, the statewide findings show that curriculum integration in California is sporadic outside of academies in many LPs. However, with respect to school-based learning activities, our findings show a strong focus on career awareness. Virtually every high school across the case study LPs now offers career awareness activities for students. And, substantial numbers of students reported having participated in career awareness activities by their senior year. There appears to be no consistent relationship between types or prevalence of career awareness or exploration activities and student demographics, suggesting that California high schools are offering these activities to the full range of students, thus meeting the State's goal of universal access.

Perhaps not surprisingly, the participation rates of California students in the more intensive types of career exploration and career-focused learning opportunities are much more limited. While virtually all LPs report having one or more career majors/pathways and one or more career academies, it is clear that these programs are not available in every high school across LPs. Moreover, some of these programs can accommodate only a small number of students. While career majors/pathways programs appear to be more prevalent in more affluent schools, schools serving low-income youth are more likely to have academies. Finally, as might be expected, high schools clearly offer more varied and more intensive career development opportunities for students than either elementary or junior high/middle schools.

The picture for WBL activities is somewhat similar to school-based activities in that: 1) WBL is now available to students at many case study LP high schools, and 2) the less intensive WBL activities are more frequently offered and have more student participation compared to the more intensive WBL activities. Although WBL can be part of either career exploration activities or a career-focused curriculum (e.g., career academies and majors/pathways), many more students in California are exposed to WBL through the former rather than the latter. WBL is especially rare for students in rural areas. Compared to other students, minority and low SES students appear to have somewhat higher WBL participation rates.

Some notable patterns have also emerged across California STC efforts with respect to the connections forged between schools and key partners. Specifically, employer involvement in STC is now fairly common, with greatest involvement at the high school level. Employers tend to participate in low-intensity career awareness activities, such as career fairs, more frequently than other kinds of activities. In contrast to employers, the case study LPs reported very limited participation by labor organizations in STC activities. A host of factors dissuade labor involvement, including age restrictions that limit high school student participation in apprenticeships and other work-site activities; students' lack of skills to participate at work locations; and perceived differences in the missions of schools and labor organizations. The involvement of CBOs in STC shows yet a different pattern from the participation of either employers or labor organizations. Engagement of CBOs seems to fall into two distinct categories: either they serve as STC leaders (as demonstrated in a few LPs), or they show limited involvement.

Finally, a significant percentage of high schools within the case study LPs have established relationships with postsecondary institutions. Most of these relationships are with community colleges rather than with four-year institutions. The most common connections are dual enrollment and articulation agreements, reflecting pre-STC connections as opposed to new innovative strategies such as K-16 sequencing. Though it is difficult to attribute these and other secondary-postsecondary connections directly to STC (as opposed to other initiatives such as Tech Prep and A-G admissions requirements), STC does appear to provide a rationale and structure to support existing connections, and teachers, administrators, and employers generally view these connections positively.

How Has STC Affected Student Preparation for Postsecondary Education and Career Entry?

This evaluation suggests that STC is positively contributing to students' preparation for post-secondary education and career entry in limited but important ways. Participation in STC strongly influences certain key attitudes and some important behaviors, as well. Specifically, participating in STC appears to have moderately consistent and positive effects for helping students know the skills, education, and training that are needed for success in the careers they are considering. Similarly, the evidence shows that STC participation positively impacts student engagement in learning by consistently making school more interesting and meaningful as well as helping students understand why doing well in school is important. The PLUS analyses finding of positive relationships between a number of measures of STC involvement with student attendance rates is further evidence that STC participation leads to higher engagement of students in learning. On the other hand, STC participation has demonstrated few consistent effects on student confidence about reaching career goals or about preparation for further education.

Overall, the evaluation showed no systematic evidence of STC's influence on high school academic achievement, the transition to postsecondary education, and early employment outcomes. However, a few LPs demonstrated positive effects of STC on some of these outcomes, including academic achievement. In addition, results from two of the PLUS LPs provide limited, but suggestive, evidence that participation in a career-focused curriculum leads to higher completion rates for A-G requirements. Similarly, 1 of the 5 PLUS studies demonstrated that participation in a career-focused curriculum leads more students to complete Algebra II. These results may have resulted from unique implementation practices or school circumstances.

How Has STC Contributed to Systemic Change?

Perhaps the most significant contribution of STC to systemic change is a clear shift toward greater focus on career awareness as a key element of the education experience provided to students. In some ways, this finding is not surprising since compared to the range of possible STC activities, career awareness activities are much easier to infuse into the curriculum than other more intensive activities. Moreover, investing in career awareness activities is less costly than supporting new instructional delivery models, such as academies. Finally, career awareness is the arena of STC activities in which employers are more likely to become and remain engaged.

Even though career awareness activities are considered low-intensity STC activities, they have demonstrated important constructive effects on particular student attitudes and behaviors. A major finding from this study is that simply increasing the number of career awareness activities that students engage in positively affects students' attitudes about their school experience. The implications of this key finding are considerable. First, they validate what many LPs and schools are already doing, verifying the effectiveness of offering career awareness activities to the full range of students. In particular, LPs and schools with limited STC resources should be heartened by this empirical finding that investing in career awareness activities (as opposed to the more expensive intensive activities) is a worthwhile strategy with demonstrated impact.

Second, other systemic STC features can be built upon the foundation provided by career awareness activities. For example, a strategic, yet comprehensive STC approach may be to target career awareness activities (e.g., interest inventories, guest speakers) to the full range of students, while selectively targeting the more intensive career exploration (e.g., internships and apprenticeships) and career-focused learning opportunities (e.g., academies or majors/pathways) to self-selected groups of students. This differentiated STC approach is summarized below.

Learning Opportunities	**Targeted Students**
Career Awareness	All students
Career Exploration	Students interested in investigating career areas
Career Majors/Pathways and Academies	Students interested in learning about and preparing for specific career areas

In summary, the findings of this study suggest that it is neither viable nor necessarily desirable for all students to have the same level of intensity of STC experiences. The approach suggested above reflects this perspective.

Is STC Sustainable?

The limited time frame and resources of the national and state STC movement make it unrealistic to expect that the systemic changes envisioned for STC would be completed at this time. However, there is evidence that LPs across the state have been thinking seriously about how to sustain an STC system in California, given the sunsetting of STWOA funding and the availability of limited State support. More importantly, many LPs are taking strategic steps to sustain and expand the effort expended to date. As described in a previous chapter, these strategies fall into six distinct categories:

1. Building support for STC and competence in STC implementation
2. Establishing solid relationships between schools and employers
3. Making programmatic changes to support STC at the school and district levels
4. Making structural changes to support STC at the school and district levels
5. Developing alternative sources of funding
6. Selectively focusing sustainability efforts on aspects that show promise

Does use of these strategies within LPs mean that STC—as a system—will be sustained? Probably not. California is making important strides toward sustaining STC, however STC is not yet a comprehensive reform approach that engages all students in the state. Moreover, there are considerable barriers that seriously impede the development and sustainability of a STC system. Among the most overwhelming barriers are lack of funding, limited support among some key stakeholders (e.g., due to persistent negative association with career-technical education and perceived conflict with accountability requirements), turnover of leadership at various levels, and lack of teacher knowledge about how to implement key STC activities and curriculum elements.

Although the sustainability of a comprehensive STC system in California is not supported by the findings of this statewide evaluation, the findings do suggest that some key STC elements are likely to be sustained based on local needs and efforts. Specifically, career awareness has become a key element of many students' education. Low intensity career awareness activities that are relatively easy and cost effective to implement (e.g., career assessments, career fairs, guest speakers, field trips to work sites) will continue to be offered in many schools. Unfortunately the future of more intense STC activities and programs (e.g., paid and unpaid internships) is less certain.

RECOMMENDATIONS

There are numerous recommendations that might be offered to strengthen STC in the future. However, we would like to offer what we consider to be the most critical to the success of STC. It is our hope that by offering and describing in detail a reasonable number of recommendations, they will warrant serious consideration by policymakers, educators, industry, and other supporters of STC.

Demonstrate How STC Fits Into an Education System that is Focused on School Accountability

A pervasive theme echoed by teachers, administrators, and LP directors interviewed within and across LPs is that the concerted attention given to high-stakes testing and accountability in California schools detracts from other education reform efforts, including STC. In this environment, schools and teachers need to understand how STC can support increased student achievement relative to important standards before they can fully embrace STC. This calls for a well-articulated vision of STC and its significance to student achievement that is persuasive to schools and teachers. This vision must be supported by convincing evidence of the impact of STC on students. For example, this study found that STC has positive effects on students' attitudes about school and engagement in learning. Furthermore, there is evidence that STC positively impacts attendance and preparation for postsecondary education as measured by increased completion of University of California A-G admissions requirements. With a clearly articulated STC vision, schools and teachers are more likely to view STC as a means for engaging students and improving their learning rather than as an "add on" that takes time away from their efforts to increase students' standardized test scores.

A concrete way to demonstrate the relevance of STC in this era of high-stakes testing and accountability is to incorporate STC into state and local assessment and accountability systems. Specifically, career-related and work readiness skills could be featured in California standards and assessments. Currently, career-related and work readiness skills are addressed at the statewide level by Assessments in Career Education (ACE), the state's end-of-course exams for selected career-technical education programs, but are not the focus of any of the state's academic assessments (e.g., California's High School Exit Exam, Golden State Exams, STAR Program).

While some states currently feature workplace readiness content for all students as part of their school assessment and accountability systems (e.g., Kentucky), it is commonly acknowledged that such skills are neither broadly nor systematically covered in the vast majority of state core academic standards and assessments.[37] Why aren't more states incorporating STC or career-focused skills into their core standards and assessment systems? There are several obstacles to doing so. First, the primary purpose of core statewide assessment systems is to measure student learning relative to academic standards. "Adding on" career-focused skills may place a significant burden on these existing assessments. Moreover, it is not clear that the resources and widespread support needed to effect such a change in core assessments would be forthcoming from the education community or the general public. Finally, the multiple-choice plus short-answer format of typical state academic tests is limited in its ability to adequately cover key aspects of career-related skills, such as teamwork, exercising leadership, and other interpersonal skills. For all these reasons, it may be unrealistic to expect that state academic core assessments serve as the primary vehicles for assessing career-related skills.

Although it may not be feasible for a state's high-stakes core academic assessments to serve as the primary means for assessing career-related skills, these tests can and should serve to reinforce such skills. In fact, a recent analysis of California's core academic assessment system conducted by WestEd showed that some academic assessment items are already cast in a workplace or other "real-world" context or address workplace readiness skills. This WestEd study also showed how academic assessment instruments could be infused with such items in a systematic way by building then into the assessment blueprints (i.e., assessment plans) for academic tests.

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[37] WestEd, 2001.

In short, demonstrating how STC fits into and supports the now all-consuming goal of increasing student achievement can be accomplished by crafting a persuasive STC vision and taking concrete steps to incorporate STC into California's student assessment and accountability system.

Promote the STC Vision

Once a STC vision has been articulated, it needs to be aggressively promoted. LPs across California are looking to the State for leadership in promoting the vision of STC to the broader education community and the general public. STC needs a strong voice to aggressively and strategically make the case for the importance and relevance of STC principles to the overall vision of education reform in California. The findings from this study that demonstrate the promise of STC in terms of improved student attitudes towards school, engagement of students in their studies, and increased attendance could be used to support and promote the vision. Promotion of the STC vision by knowledgeable and authoritative voices would give credibility to local STC efforts and the "boost" that locals need as they attempt to expand STC participation by students, teachers, employers, labor organizations, CBOs, and postsecondary institutions. Promotion by the State may help teachers, in particular, become more familiar with the philosophy and purposes of STC, and thus be more inclined to support STC efforts.

Implement a Statewide Student Data Tracking System

Both the local and statewide evaluation efforts that contributed to this study were hampered by the unavailability or limited availability of student-level data. While there is an understandable need to protect student privacy, there is also clearly a need for a comprehensive student data system in order to better monitor and evaluate the impact of STC and other reforms on schools and students. Schools and their partners can use student data to help inform the initial design of their reform efforts. Perhaps more importantly, student data can help determine any necessary midcourse corrections as reform efforts are underway. Finally, student data are essential in order to conduct comprehensive studies that follow up on promising findings from this study, demonstrating to policymakers, businesses, and the general public where and how STC is making a difference for our students.

On a positive note, there has been a statewide effort underway for the last several years to develop and implement a comprehensive student information system. California's Student Information System (CSIS) is currently being pilot-tested in 149 school districts across the state. This system will contain key student data—such as program participation, courses, grades, standardized test scores—that are necessary for conducting rigorous studies of STC's impact on students. What CSIS will not provide are data on students after they leave the K-12 system. Thus, studies of STC's impact on students after they leave high school will depend on cooperation across California's educational sectors to build an integrated data system

Provide Leadership and Support for System-Building Initiatives

The results of this evaluation study underscore the importance for policymakers to take a long-term perspective on new, promising reforms such as STC. Reform takes time. A longitudinal view is important to allow for proper implementation of a comprehensive reform strategy and examination of its impact. As indicated by this study's findings, STC's system-building needs over the long term include professional development, funding resources, and strategic partnerships, as well as structural and programmatic changes.

Moreover, hands-on leadership is necessary to ensure progress towards long-term goals. Local efforts clearly need strong guidance and support to develop and sustain STC. The State can provide such leadership by aggressive information collection and dissemination of "best practices."[38] Local efforts would also benefit from regular monitoring of progress towards full implementation of STC in order to ensure that midcourse corrections can be made, as necessary.

Finally, effective leadership for system-building initiatives must meaningfully connect STC to other related educational initiatives such as California Partnership Academies, Tech Prep, and community and service learning. These connections could serve to leverage and strengthen each individual initiative. More importantly, the connections should weave a more comprehensive network in support of career-related learning in California.

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[38] American Youth Policy Forum & Center for Workforce Development, 2000.

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